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NG: State AG (3).

USAR: None.

For explanation of abbreviations used, see AR 320-50.

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TABLE 1.1

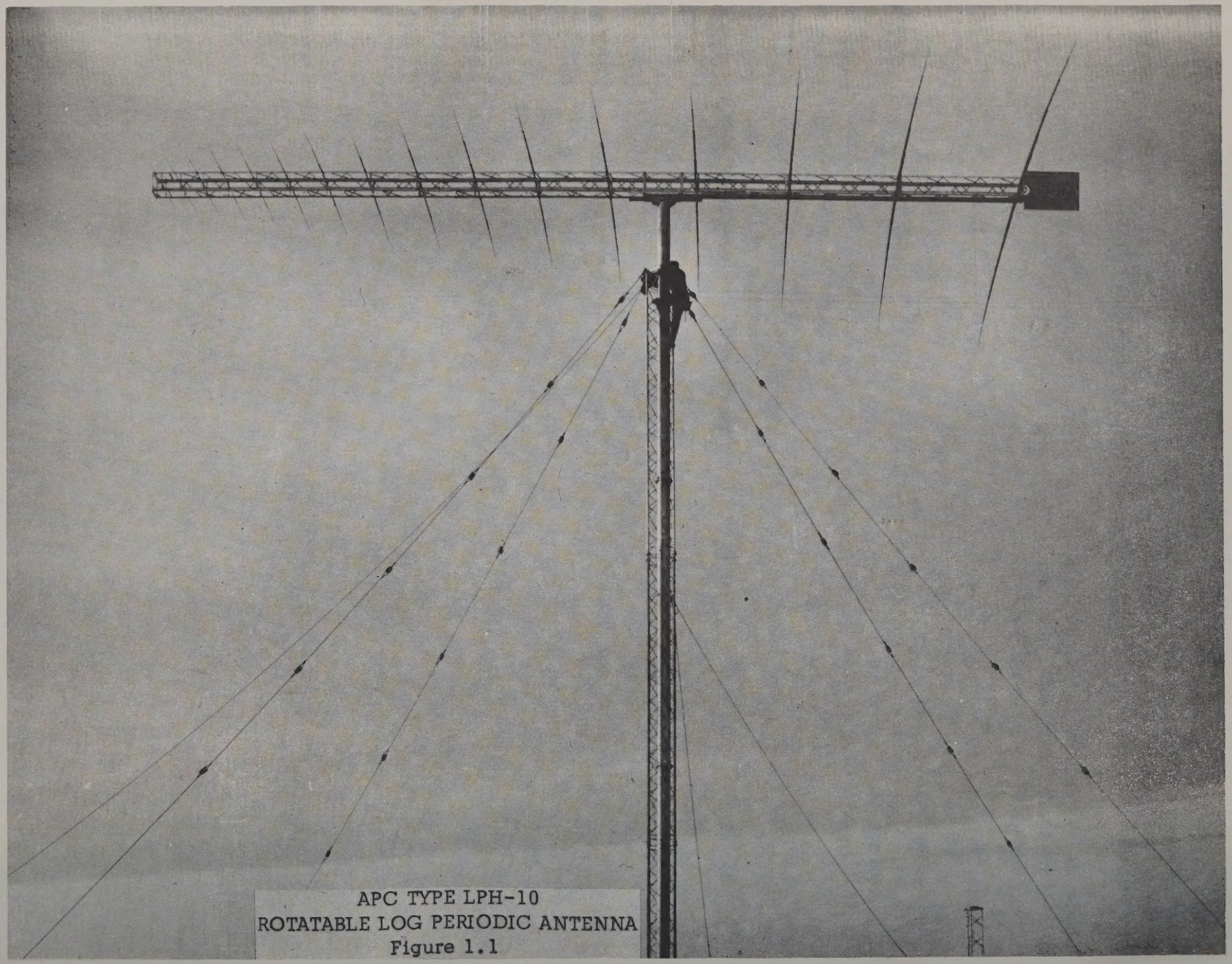
EQUIPMENT SUPPLIED

APC PART NO.	PART NAME	DESCRIPTION
0001 0209 001	Antenna Kit	Aluminum Angle Boom Complete with Wind Sail, Elements, Transmission Line and Transformer.
1000 0210 001	Mast Kit	Four 10 Inch OD Pipe Sections, 20 Ft. Long, Each Containing a 20 Ft. Section of 1 5/8" Air Dielectric Coax.
1000 0208 001	Tower Kit	Two 80 Ft. Towers Complete with Guys, Top Bearing Ass'y and Base Ass'y.
1000 0176 001	Ground Hdw Kit	Guy Anchors and Pier Bolts.
1000 0179 001	Erection Kit	Lifting Strap, Lifting Sling, Erection Mount, and U-Bolts.
1000 0221 001	Rotator Kit	Complete Rotator Kit with Motor, Gear Box, Pivot Mount, Relay Panel, and Synchro Ass'y.
1000 0215 001	Control Panel	Relay Rack Mounting Type Control Panel with Switch, Panel Light, and Azimuth Indicator.

TABLE 1.2

OPTIONAL ITEMS NOT NORMALLY SUPPLIED

PART NAME	DESCRIPTION
Concrete	4 Cu. Yards Total.
Reinforcing Steel	
Obstruction Marking Paint	
Obstruction Lighting Kit	
Service Drop to Rotator	208 Volt, 50 - 60 CPS 2 Amp Run, 3 Amp Start or Reverse, Maximum.
Control Cable	Cable from Control Panel to Rotator, 9 Conductor Min., 18 AWG Min. each Conductor.



APC TYPE LPH-10
ROTATABLE LOG PERIODIC ANTENNA
Figure 1.1

LOG PERIODIC ANTENNA

APC TYPE LPH-10

1.0. General Information

1.1. Scope

a. This manual describes Log Periodic Antenna Type LPH-10 and covers its installation, operation, functioning and maintenance.

b. Appendix A contains a list of publications applicable to this manual. Appendix B contains the list of major components and operating supplies required for initial operation. Appendix C contains a list of special tools and repair parts and Appendix D contains the assignment of maintenance functions and repair operations to be performed at the appropriate maintenance categories.

1.2. Index of Publications

Refer to the latest issue of DA Pam 310-4 to determine whether there are new editions, changes, or additional publications pertaining to the equipment. Department of the Army Pamphlet No. 310-4 is an index of current technical manuals, technical bulletins, supply manuals (types 7, 8, and 9), supply bulletins, lubrication orders, and modification work orders available through publications supply channels. The index lists the individual parts (-10, -20, -35P, etc) and the latest changes to and revisions of each equipment publication.

1.3. Forms and Records

a. Reports of Maintenance and Unsatisfactory Equipment. Use equipment forms and records in accordance with instructions in TM 38-750.

b. Report of Damaged or Improper Shipment. Fill out and forward DD Form 6 (Report of Damaged or Improper Shipment) as prescribed in AR 700-58 (Army), NAVSANDA Publication 378 (Navy), and AFR 71-4 (Air Force).

c. Reporting of Equipment Manual Improvements. Report of errors, omissions, and recommendations for improving this equipment manual by the individual user is encouraged. Reports should be submitted on DA Form 2028 (Recommended Changes to DA Publications) and forwarded direct to: Commanding General, U.S. Army Electronics Command, ATTN: AMSEL-MR-NMP-AD, Fort Monmouth, New Jersey 07703.

1.4. Purpose of Equipment

The APC, HF Antenna, Type LPH-10, is a rotatable log periodic antenna suited for fixed station installation world-wide. Because it is rotatable in azimuth, provides a wide range of take-off angles and can handle high transmitter power, it is an excellent general purpose antenna for medium to long haul circuits. It does not on the other hand, provide coverage of the lower frequencies and high take-off angles necessary for short range

communications (less than 400 km/s). The LPH-10 is suitable for transmitting or receiving. The low levels of extraneous radiation (side and back lobes) are particularly helpful in rejecting interference from undesired directions.

The input impedance is 50 ohms unbalanced and the antenna is normally fed with 3 1/8" coaxial cable where the antenna will be utilized for transmitting. Smaller line can be utilized for low power or receiving installations, however, in this case it is important that some provision be made to pressurize the antenna. Without pressurization damp air will be drawn into the transmission lines of the antenna and moisture will condense in these lines. Drastic reduction of efficiency of the antenna will result. It is suggested that a pressurized feed line be utilized for all installations so that the antenna can be pressurized by reliable monitored equipment inside the equipment building. A pop-off valve is provided for purging the air line.

The high environmental rating and small size recommend this antenna for use under widely varied conditions world-wide. Erected, the antenna occupies a plot approximately 120' square. Since corrosion resistant materials are utilized throughout and dissimilar metal joints avoided, long life in any climate can be expected.

1.5. Equipment Description

The LPH-10 is a log periodic dipole antenna supported by a 10 3/4" dia, 80' galvanized steel mast. The mast mounts onto a rotator that pivots between two 80' galvanized steel towers. The twin

towers utilize a welded constructed hinge base which rests on a concrete pier and is secured by six, 3/4" bolts. Four, 1/2" bolts are also mounted into the concrete pier to secure the hinge portion of the base. The towers are connected together at the top by the bearing assembly which secures the mast section for rotation. The guying consists of four, 1/2" insulated steel guys 90° apart and secured at the ground by galvanized anchors mounted into concrete.

1.5.1. The antenna proper consists of a 66' long rectangular shaped aluminum boom which supports the 16 element assemblies. Each element mounts to a fiberglass angle at two places thus insulating the element from the boom. The element assemblies are constructed of aluminum tubing and/or aluminum rod and are insulated at the center by a fiberglass tube.

1.5.2. The inner conductor of the coaxial air line is made of copper tubing and is insulated from the aluminum outer conductor by teflon spacers. This air line is supported inside the 20' mast sections by four stainless steel springs at each section. Three stainless steel hose clamps secure the air line to one corner of the boom between the mast and the rear of the boom at element #16. From element #16 through element #1 the air line becomes a transformer which is mounted to and below each element with an aluminum bracket utilizing a stainless steel hose clamp.

The dummy section of the transmission line is connected above the elements in this same manner and runs from element #1 through element #16. At the connection of element #16 the dummy line is shorted to the transformer through the shorting coil.

1.6. SPECIFICATIONS

ELECTRICAL

Frequency Range	6.5 to 32 mc/s.
Power Capability	50 kw average (Continuous).
Input Impedance	50 ohms nominal with 3 1/8" EIA input connector.
VSWR	2:1 maximum at any frequency in the frequency range.
Gain	*14 db over isotropic.

*Assumes plane earth and reflection coefficient equal to minus one.

Polarization	Horizontal
Height of Phase Center	86 Ft
Azimuth Beamwidth	65° average (60° min - 70° max).
Front to Back	20 db average 14 db minimum
Side Lobes Suppression	20 db

MECHANICAL

Rotation	
Speed	1/2 r.p.m.
Control	Any azimuth position from 0 - 360°.
Remote Operation	Control panel is furnished to allow remote control of rotation.
Environment	
Wind Loading Capability	120 m.p.h. wind, no ice or 100 m.p.h. wind with 1/4" radial ice.
Weight	6,573 net
Pressurization	10 p.s.i. pop-off pressure and approx 5 p.s.i. continuous. Coax completely pressurized through rotary joint from feed cable (no closed or unpressurized sections).
Input Power	208 volt, 60 cycle, 3 phase, 2 amp run, 3 amp start or reverse, max.

2.0. Checking Unpacked Equipment

a. Inspect the equipment for damage that may have been incurred during shipment. If the equipment has been damaged, fill out and forward DD Form 6 (para 1.3b).

b. See that the equipment is complete as listed on the packing slip. If a packing slip is not available, check the equipment against the table of components list (appx B). Report all discrepancies in accordance with TM 38-750. The equipment should be placed in service even though a minor assembly or part that does not affect proper functioning is missing.

c. If the antenna has been used or reconditioned, see whether it has been modified. If the antenna has been modified, the MWO number will appear near the nomenclature plate. Check to see whether appropriate notations concerning modifications have been written into the manuals on the equipment.

Note: Current MWO's applicable to the equipment are listed in DA Pam 310-4.

2.1. General

Installation of the LPH-10 antenna system is accomplished in two operations. First the erection of the twin towers and second the erection of the antenna and antenna mast. The suggested type of erection is by means of a falling gin pole with the use of a winch truck, however, a crane may be used if so desired.

A 20' section of pipe mast is used as a falling gin pole to erect the twin towers. The antenna and mast are erected with the winch cable through a block attached to the bearing assembly at the top of the tower and wrapped around the mast. The rotator pivots between the towers thus allowing the mast to be hoisted to a vertical position.

The tower base and guy anchors, except the erection screw anchor, are set in concrete. Tools for excavation and concrete handling must be available.

2.2. Selection of Site

2.2.1. Electrical Considerations

If the antenna is to be used for receiving, consideration should be given to electrical interference emanating from nearby sources. High tension power lines, construction projects, electric motors, welding equipment, unshielded ignition systems, fluorescent lights, etc., are examples of objects which normally generate high levels of electrical noise. The greatest possible separation from objects of this sort will considerably enhance the operational reliability of the communication circuit

The antenna should be located in a clear area as large as possible. Obstacles which have an appreciable conductor length in the horizontal plane, such as guy wires, other antennas, power lines, buildings with steel reinforcement, etc., are especially objectionable. Such obstacles located close to and in front of the antenna may not only disrupt the radiation characteristics of the antenna, but can also have adverse effect upon the impedance characteristics.

2.2.2. Mechanical Considerations

The area required for installation is approximately 180' long x 120'

wide. This area should be as level as possible, well drained, cleared of tall vegetation and exhibit a minimum load bearing capacity of 2,000 lbs per sq ft, such as firm clay or compact sand. If an area is selected for installation which cannot provide this minimum load bearing capacity, the sizes of all concrete piers and anchors must be increased to further distribute the loads. APC engineers can provide advice when it is needed.

2.3 PREPARATION FOR ERECTION

2.3.1 Pre-Installation

Having selected the antenna site the ground beneath the antenna should be cleared of all brush. This area should be approximately 180' long and 120' wide, as shown in the pier and anchor layout, Figure 2.1. This will enable assembly of the antenna without interference of vegetation. Dig the necessary pier and anchor holes as shown. The concrete is ready for pouring upon completion of the installation of the necessary anchors.

CAUTION

The tower pier bolts are to be inserted into the concrete when it is wet. Refer to the note in Paragraph 2.4.1 below.

Level pier surface with a spirit level and float a fine-grained surface on the top. Allow a minimum of seven days for the concrete to cure before erecting the towers. If a crane is used for erecting the towers the screw anchor may be eliminated.

2.4 ASSEMBLY AND ERECTION

2.4.1 Tower

Set the tower base onto the pier and check for a level condition. If the base is not level, grout must be used to insure a level condition.

NOTE

It is necessary to completely fill all spaces under the base with grout. This will eliminate twisting of the towers when stopping rotation of the antenna.

Attach the base assembly to the pier with the four 1/2" pier bolts, as shown in Figure 2.2, allowing the base assembly to pivot. Layout the two 80'

towers along the ground, parallel to each other, with the steps on the same side throughout. The bottom sections of tower contain the rotator pivot mounts and should face each other. Attach the bottom section of tower (to the base) with the 1/2 - 13 x 1 1/2" galv hex head bolts, nuts and lockwashers, as shown in Figure 2.2. Connect the remainder of the tower sections together with the same hardware. The top tower sections should be assembled with the holes for mounting the "top bearing", facing each other. Attach the top bearing assembly, as shown in Figure 2.3, with the detachable half of the bearing facing down. This outer bearing half should be swung out and tightened with one bolt as shown. This will allow the mast to fit into the bearing during erection.

2.4.1.1 Assemble the guy assemblies as shown in Figure 2.4 and attach the guys to the guy tabs as shown in Figure 2.3. The two guys attached to the lower guy tabs should be connected to their respective anchors. It is suggested that a cable hoist be used at each anchor thus allowing frequent adjustment of the guy assemblies while plumbing the tower and preventing excessive wear on the guy grip dead ends.

2.4.1.2 Bolt the erection mount onto the base assembly with the two u-bolts provided, see Figure 2.2. Hoist a 20' section of pipe mast, to be used as a falling gin pole, above the twin towers and attach one end to the erection mount with the four, 5/8" dia bolts provided. The upper end of the gin pole may be supported by using a 4 x 4.

Bolt the lifting strap to the gin pole and connect the erection sling between the gin pole lifting strap and each tower lifting eye, as shown in Figure 2.6. Position the winch truck and connect the winch cable through a block attached to the lifting strap on the gin pole and to the screw anchor, as shown in Figure 2.6.

WARNING

The winch line and block must have a minimum working load rating of 2 1/2 tons. If the wind velocity exceeds thirty miles an hour, side tag lines or the remaining two unconnected guy assemblies must be used to keep the tower from leaning sideways during erection.

NOTE

Before erection, grease the pivot points to prevent the galvanizing from being scraped off and to ease the erection operation. The initial raising of the falling gin pole can be done by the use of manpower until the winch truck has enough leverage to raise the gin pole to a vertical position. The twin towers are now ready for erection.

2.4.1.3 During the erection of the twin towers carefully watch the guy insulators for twisting. When the towers are in the near vertical position connect the remaining two guy assemblies to the anchor with a cable hoist.

WARNING

Do not try to plumb the tower by tensioning the winch cable.

This will put excessive load on the erection lifting strap. Plumb the tower by use of the cable hoist at each anchor putting 650 to 850 lbs tension in each guy cable. Connect the guy grip dead ends and remove the cable hoist. Retension the guys with the turnbuckles to the tension mentioned above. Position tie down straps as shown in Figure 2.7 and tighten all pier bolts (including the four 1/2" bolts) securely. This completes the erection of the twin towers. The falling gin pole and lifting guys may now be removed for preparation of erection of the mast and antenna.

2.4.2 Rotator

Attach the cable of a crane or winch truck "A" frame to the eye bolt on the rotator flange and hoist the rotator from the crate into position between the two towers. Position the rotator such that the mast flange pivots to the erection side as shown in Figure 2.8.

NOTE

Center the rotator between the pivot mounts, to allow the housing to be removed and assembled more easily.

The rotator is secured in the pivot mounts by two bolts that act as pins. The rotator cover must be removed to provide access for assembly of the rotary joint.

2.4.2.1 Set the short section of the transmission line (with studs welded on one end) into the rotator as shown in Figure 2.9. Slip the rainshield (with gasket) over the studded flange. This will keep the rainshield out of the way while making the transmission line connections. Position a section of mast near the rotator, supported at the desired height, and slide a 20' section of transmission line through the mast. The rotator will have to be pivoted to allow the mast flange to be in a vertical position before installing the inner conductor. Pull the inner conductors out of each section as needed to insert the bullet assembly. Slip the o-ring over the inner conductor and plug

the bullet into each inner conductor.

NOTE

There should be approximately 1/16" distance between the end of the center conductor and the bottom out position on the bullet assembly.

2.4.2.2 Having connected the inner conductors together, lubricate the o-ring with the silicone grease provided and bolt the two flanges together with the 5/16" dia hardware as shown in Figure 2.9.

CAUTION

The transmission line o-rings must be properly seated when the flanges are mated. REFER TO PARAGRAPH 2.5.6 FOR THE PRESSURE TEST.

Slip the rainshield gasket around the studded flange and clamp securely with hose clamp P/N QS200M72S.

NOTE

Since the transmission line is supported by springs inside the mast section, the transmission line may be pulled back and forth as needed for making connections. Before the antenna is erected, the rotary joint should be installed. This will aid in supporting the transmission line while making the connection at the mast head plate.

CAUTION

The rotary joint should be handled with care to prevent damage of internal parts. Refer to Figure 2.30 and install the rotary joint with the hardware as shown.

2.4.3 Mast

Slide the mast section onto the rotator.

NOTE

The 5/8" flat washers must be positioned between the mast flange and the rainshield. This is to allow water to drain. Bolt the flanges together with the 5/8" dia hardware as shown in Figure 2.9.

Connect the four springs inside the upper end of the mast between the inner mast tabs and the transmission line tabs as shown in Figure 2.9. Follow this same procedure for the assembly of the remainder of the

mast sections and transmission lines as shown in Figure 2.10. Position and connect the top mast section with the two head plate pivot holes facing down, as shown in Figure 2.18.

Run the winch cable through a block attached to the bearing assembly at the top of the tower and wrap it around the mast and through the eye welded to the mast pipe, as shown in Figure 2.24. Either support the mast a sufficient height above ground to allow assembly of the antenna beneath the mast, or erect the mast to a vertical position and secure during antenna assembly.

2.4.4 Antenna

2.4.4.1 Refer to Figures 2.11, 2.12, and 2.14 for the boom section assemblies. Boom section #1 is completely assembled. Boom section #2, 3 and 4 are in half sections.

NOTE

The weight of the boom with transmission line is approximately 510 lbs and that of the elements is approximately 470 lbs. This makes a total weight of approximately 980 lbs. To eliminate having to lift the boom into position for erection, the boom may be assembled in position beginning with section #3 so that the pivot point of section #3 coincides with that of the mast headplate as shown in Figure 2.18. The boom is assembled upside down with the rear facing the towers. It is suggested that the boom be supported off the ground during assembly to allow access of all four sides. Do not assemble the wind sail to the boom at this time.

2.4.4.2 Boom Assembly

As stated above, boom section #1 is completely assembled. Refer to Figure 2.11 for the assembly of section #2. The two half sections are identical and all of the horizontal braces, top and bottom, are identical. Assemble all the hardware and connecting braces, but do not tighten until the complete boom is assembled.

Section #3 is assembled per Figure 2.12 and 2.13. Sections 3A and 3B are connected with the twenty-eight horizontal tubular braces positioned as shown. Figure 2.13 shows the center detail. Two angle braces and four short tubular braces are attached as shown. Assemble all hardware but do not tighten at this time.

Section #4 is shown in Figure 2.14. The two boom section halves

are identical and all horizontal tubular braces are identical. The rear end of section #4 utilizes two aluminum angle braces. They not only connect the half sections together, but also are used to attach the wind sail, as shown in Figure 2.26. These braces are identical and are attached with two lengths of bolts. Where the diagonal brace of the wind sail, Figure 2.26, attaches to the boom, a 5/16 - 18 x 1 1/4" bolt is used, with a 5/16 - 18 x 1" bolt being used at the other two corners.

The boom sections are to be assembled together as shown in Figures 2.15, 2.16, and 2.17. Having attached all of the hardware, straighten the complete boom assembly and tighten all hardware. If this procedure is not followed, a twist in the boom may result.

2.4.4.3 Element Assembly and Installation

Refer to Figures 2.20A and 2.20B for the assembly of each element section.

NOTE

Align all the element sections with the 1/8" dia drain holes on the same side.

Before installing the elements into the boom, refer to Figure 2.19 and assemble the feed straps and spacers to the elements. Assemble the bolts through element and position a "tube" spacer between the element and the feed strap. The feed straps should be on opposite sides of the element and facing toward the center. Having completed the assembly of all the elements, insert them into the boom assembly beginning at the front, Figure 2.23, or the rear, Figure 2.22.

NOTE

As stated above, the 1/8" dia drain holes must be positioned up, and the feed straps must be on the correct side.

Attach the elements to the boom with the u-bolts and saddles as shown in Figure 2.19.

NOTE

Do not tighten the u-bolts until the transmission line has been installed.

2.4.4.4 Transmission Line Installation

Position the double bend transmission line section, P/N 0001 5028 001, into the boom from the center toward the rear of the boom, with the elbow facing up and positioned in the center of the boom (a distance of 13 5/16" from a line between the boom pivot holes). Refer to Figure 2.18. The sections of transmission line and dummy line are assembled as shown in Figure 2.21. For the assembly of the inner conductor and bullets refer to Paragraph 2.4.2.1 and Figure 2.10.

NOTE

The inner conductor of the transmission line is the same size from the rotator to the u-section of transmission line. Beyond this point the three sections of transmission line become a transformer having a tapered inner conductor. Therefore, the three bullets connecting these sections together vary in size.

The center conductor of the transmission line is connected to the dummy line with a jumper strap. The dummy line consists of a short section, three 20' sections and a short terminating section. Stainless steel hose clamps are utilized for clamping the transmission line (from head plate to u-section) to the corner of the boom. A phenolic block must be positioned between the transmission line and the boom leg to prevent bending of the transmission line. Equally space the hose clamps with block under the center clamp and secure. Position the shorting coil on element #16 as shown in Figure 2.22.

Center elements #16 and #1 in the boom and clamp the transmission line and dummy line to the element feed straps. Straighten the transmission line, thus centering the elements and tighten all connections.

CAUTION

In order to prevent damage, torque u-bolt nuts as follows: #1 - 7, 90 in-lbs; #8 - 13, 110 in-lbs; #14 - 16, 150 in-lbs.

2.4.4.5 Erection

The antenna assembly is now ready for erection. Lower the mast into position and insert the 5/8" dia x 22" bolt through the pivot holes of the mast head plate in the boom section. Figure 3.9

CAUTION

Do not assemble the bullet into the adaptor section before the antenna is

pivoted into position.

Attach two tag lines to the mast assembly as shown in Figure 2.24, for the purpose of keeping the mast from leaning sideways during erection and also to allow the mast to be positioned into the top bearing assembly on the tower. As the antenna is erected pivot the antenna until it is perpendicular to the mast, as shown in Figure 2.24. Lower the antenna so that the rear of the boom may be set on blocks.

CAUTION

Set blocks to avoid damage to the shorting coil.

Keeping tension in the winch cable, climb the boom and attach the twelve bolts that secure the boom to the mast head plate, as shown in Figure 2.25.

2.4.4.6 Assemble the transmission line sections at the mast head plate following the same procedure as previously mentioned. Erect the antenna off the ground sufficiently to attach the wind sail assembly as shown in Figure 2.26. This completes the assembly of the antenna.

2.4.4.7 Complete the erection using the tag lines to keep the mast from leaning sideways, and to position the mast into the top bearing when it reaches the vertical position, as shown in Figure 2.27. When the mast reaches the vertical position climb the tower and secure the mast with the outer bearing half. This completes the erection of the LPH-10 antenna system. The tag lines and winch cable may now be removed.

2.5 CONNECTIONS AND ADJUSTMENTS

2.5.1 Connect the input power to the L1, L2, and L3 terminals as marked on the rotator breaker panel. Figure 2.28. Connect the control cable wires to the breaker panel terminal strip and to the corresponding terminal number on the control panel.

2.5.2 In order to synchronize the antenna direction with the control panel indicator, follow the procedure as given herein. Supply power to the rotator and push one of the relay solenoids to the "up" position as shown in Figure 2.8.

CAUTION

Hold the solenoid up firmly and do not allow it to chatter.

By using this procedure, rotate the antenna to a desired heading, say north. Loosen the set screw on the synchro gear, slip the gear down and rotate

until the control panel indicator reads the same heading as the antenna. Position the gear and re-tighten the set screw.

2.5.3. Remove the vent pin on the rotator, as indicated by the attached red tag, before full operation of the rotator, and before assembly of the rotator cover.

2.5.4. Reinstall the two halves of the rotator cover and bolt the rotary joint flange to tne cover with the four, 1/4 - 20 x 1" SST, hex screws and lockwashers.

2.5.5. NOTE

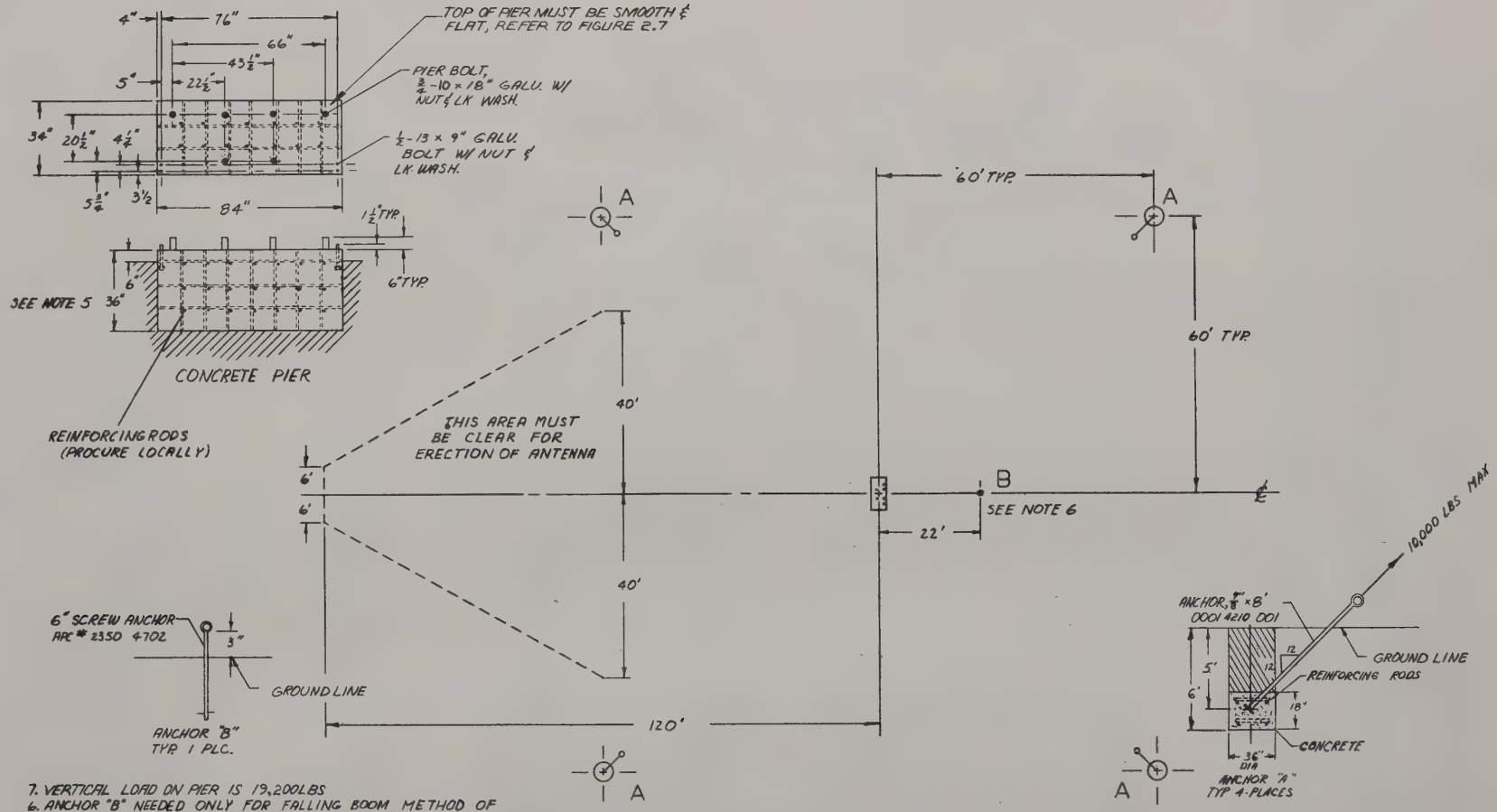
The input transmission line should come straight into the bottom of the rotator to prevent any side load on the rotary joint.

2.5.6. The complete transmission line of the system is pressurized through the input transmission line. The end section of the transmission line at the front of the antenna contains a pop-off valve for purging the system. This valve pops off at approximately 10 PSI. The normal system pressure should be approximately 5 PSI.

2.5.7. After about 20 starts and stops or after one week, check the chain for excessive slack and the set screw on the small sprocket for tightness. Refer to the maintenance Section 4.4 for the tensioning procedure.

2.5.8. Grounding

The support structure should be electrically grounded with a 6 ft. long (minimum length) copper ground rod having a copper wire of at least No. 6 size bonded to the ground rod and to the tower leg. The ground rod should be located near the pier and driven to a depth of at least 6" below the ground level. The copper wire should attach to the tower leg with a bi-metal clamp to prevent corrosion due to incompatibility of the galvanized tower leg and the copper wire. If a bi-metal clamp is not available, then coat the connection with a bi-tuminous paint.



7. VERTICAL LOAD ON PIER IS 19,200 LBS
6. ANCHOR "B" NEEDED ONLY FOR FALLING BOOM METHOD OF ERECTION WHERE CRANE IS NOT AVAILABLE.

5. PIER DEPTH DIM. MAY BE VARIED TO SUIT SOIL CONDITIONS.

4. REINFORCING RODS ARE RECOMMENDED TO BE USED IN CONCRETE PIER AND ANCHORS. RODS SHOULD HAVE A MIN. DIA. OF ½" WITH MAX. SPACING OF 12"

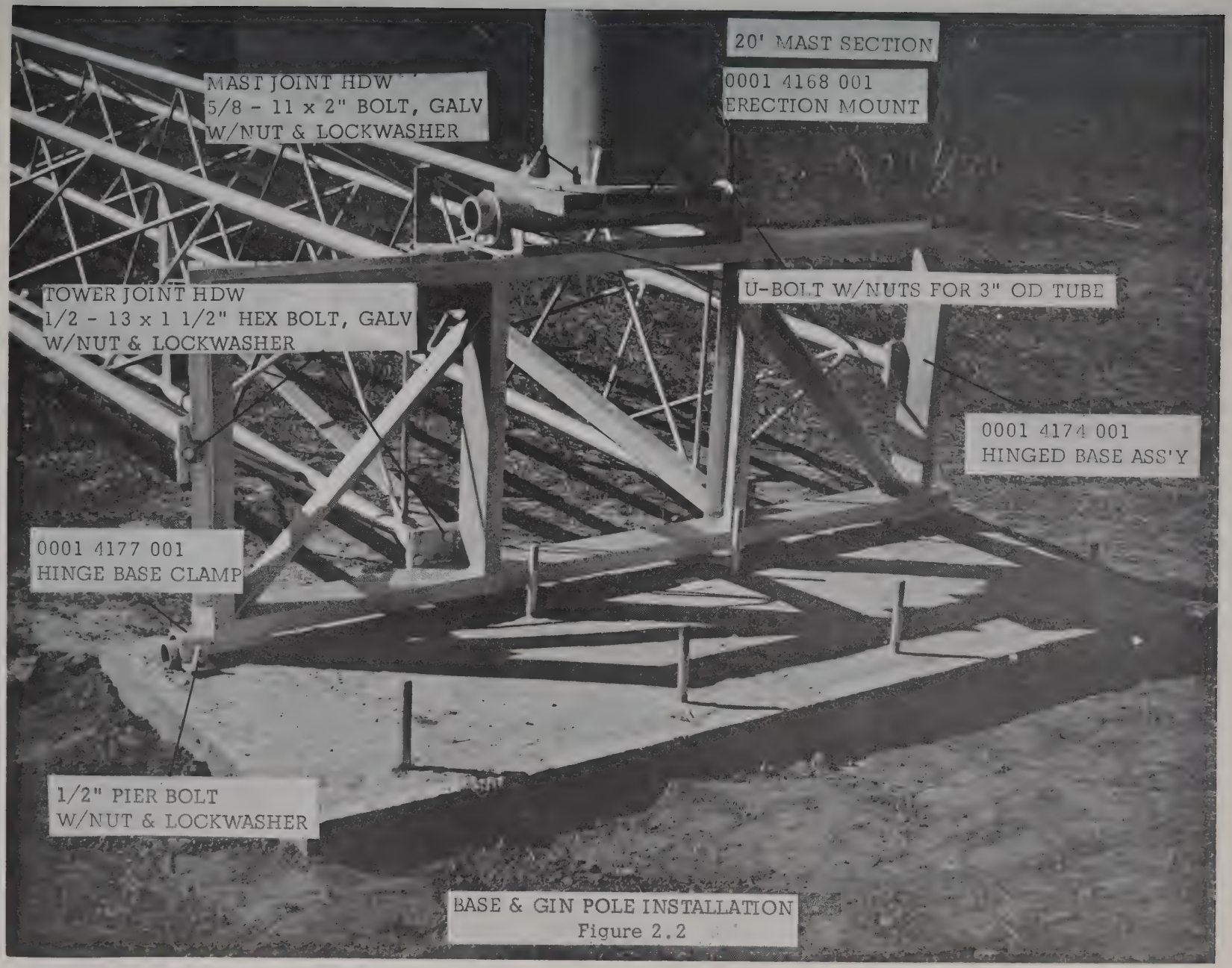
3. PIER AND ANCHORS DESIGNED FOR AVERAGE (2000 PSF) SOIL (FIRM CLAY, COMPACT SAND).

2. CONCRETE TO BE 1:2:4 MIX. (CEMENT: SAND: GRAVEL) 4 CU. YDS. REQD.

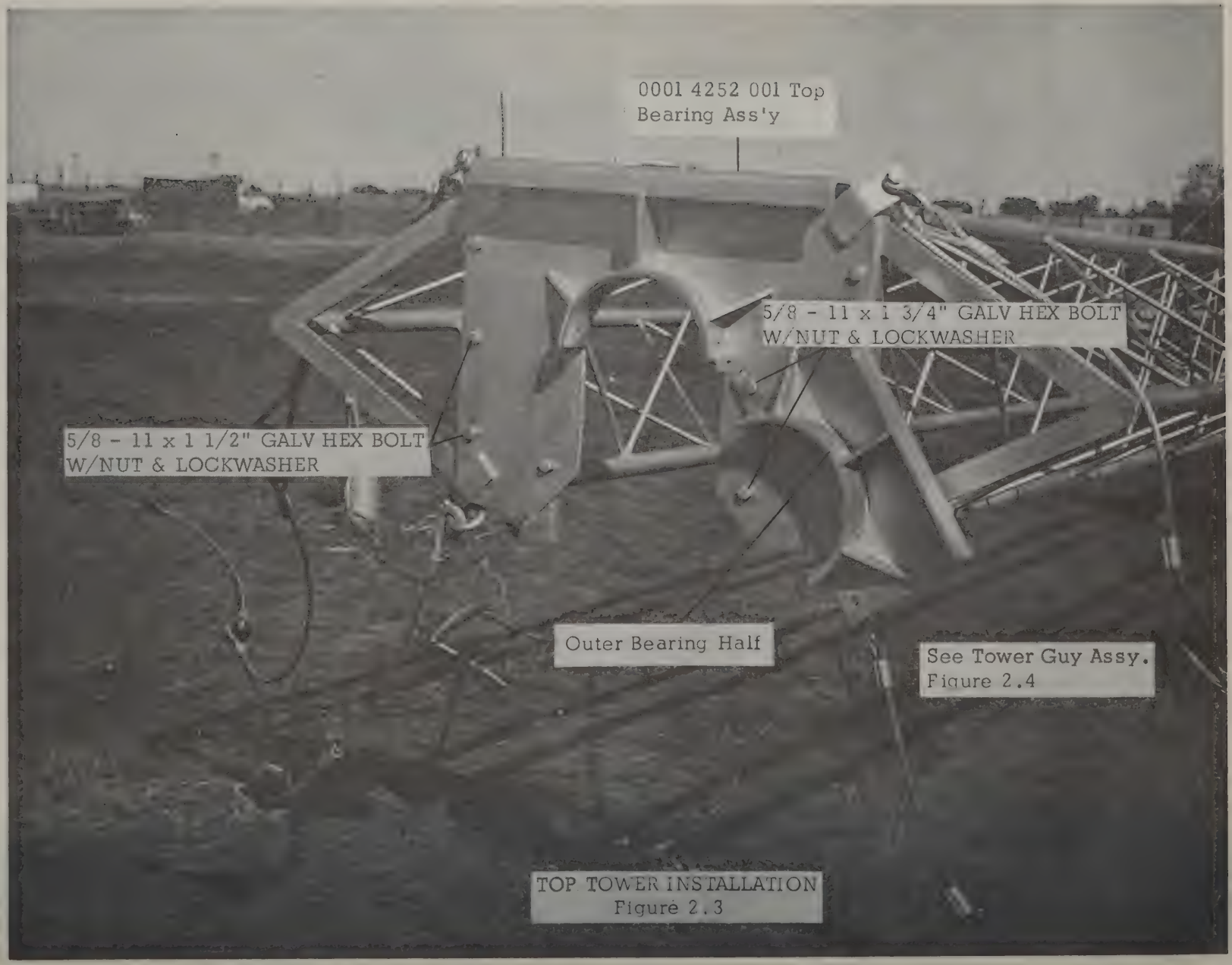
1. OVERALL DIMS. OF ERECTED ANTENNA 122' x 122'

NOTES:

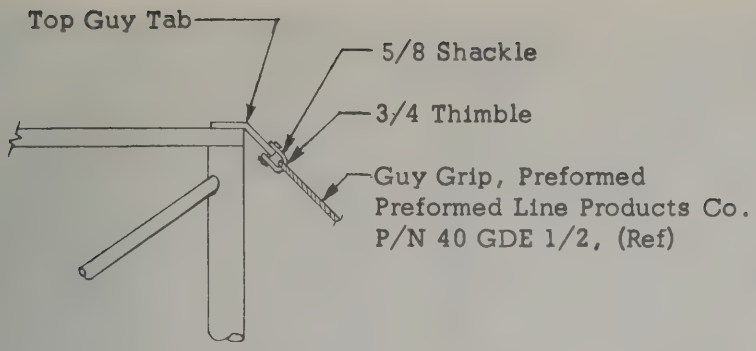
PIER AND ANCHOR INSTALLATION
Figure 2.1



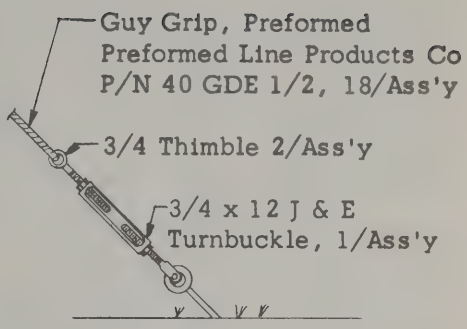
BASE & GIN POLE INSTALLATION
Figure 2.2


0001 4252 001 Top
Bearing Ass'y
5/8 - 11 x 1 3/4" GALV HEX BOLT
W/NUT & LOCKWASHER
5/8 - 11 x 1 1/2" GALV HEX BOLT
W/NUT & LOCKWASHER
Outer Bearing Half
See Tower Guy Assy.
Figure 2.4

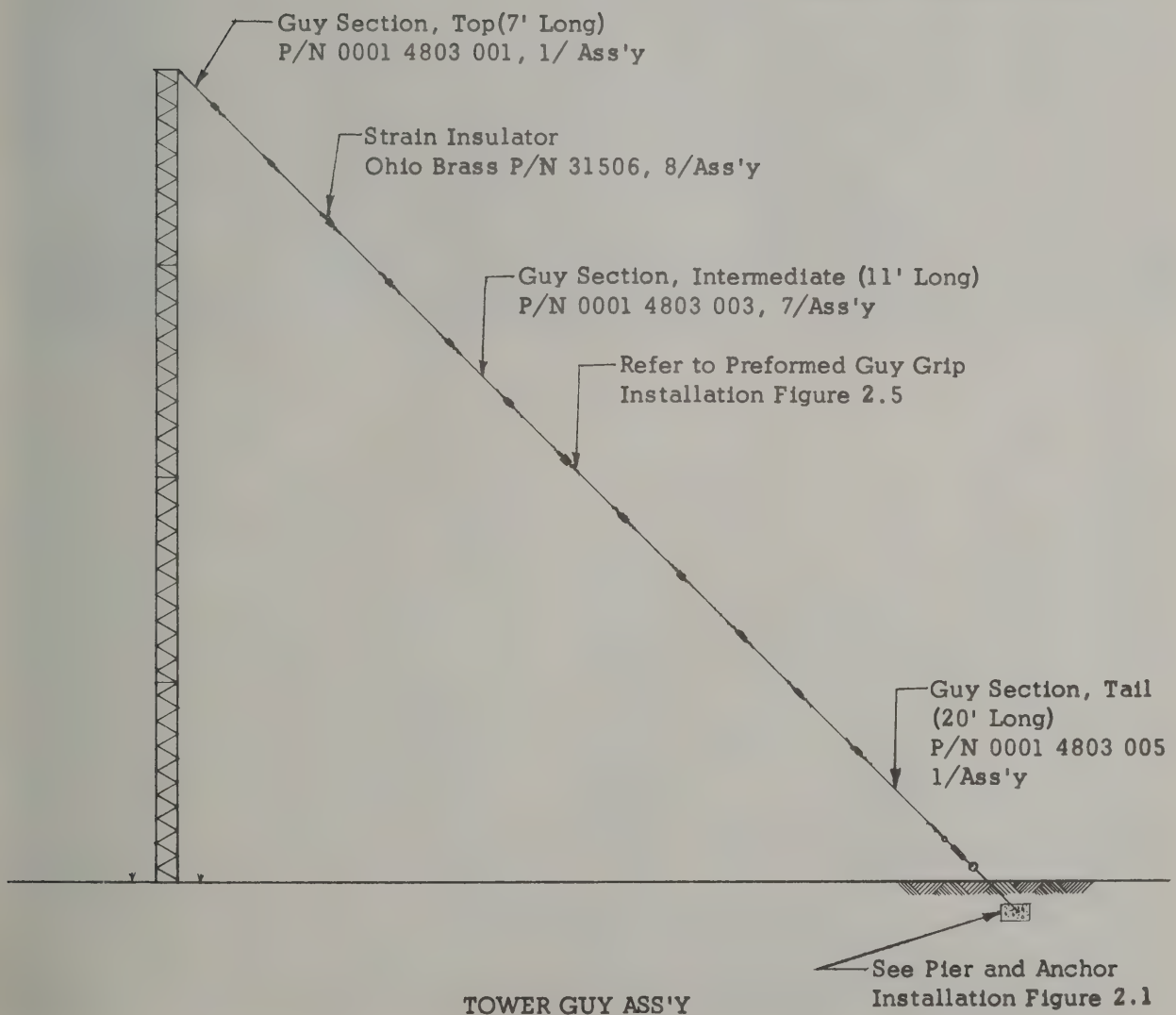
TOP TOWER INSTALLATION
Figure 2.3



TOP TOWER CONNECTIONS



ANCHOR CONNECTIONS



TOWER GUY ASS'Y
Figure 2.4

1. Preassembly on the ground

a. Select pole top hardware.

b. Apply one or two wraps of tape around tail of guy strand to keep the wires in place. Avoid excessive taping.

c. Pass one leg through the eye of the fitting.

2. To apply the first leg

a. With thumb pressure, hold taped tail of strand firmly inside one leg—one to two inches beyond Crossover Mark A.

b. Wrap on two or three pitches by rotating the leg around the guy strand and, at the same time, pulling the leg away from the strand.

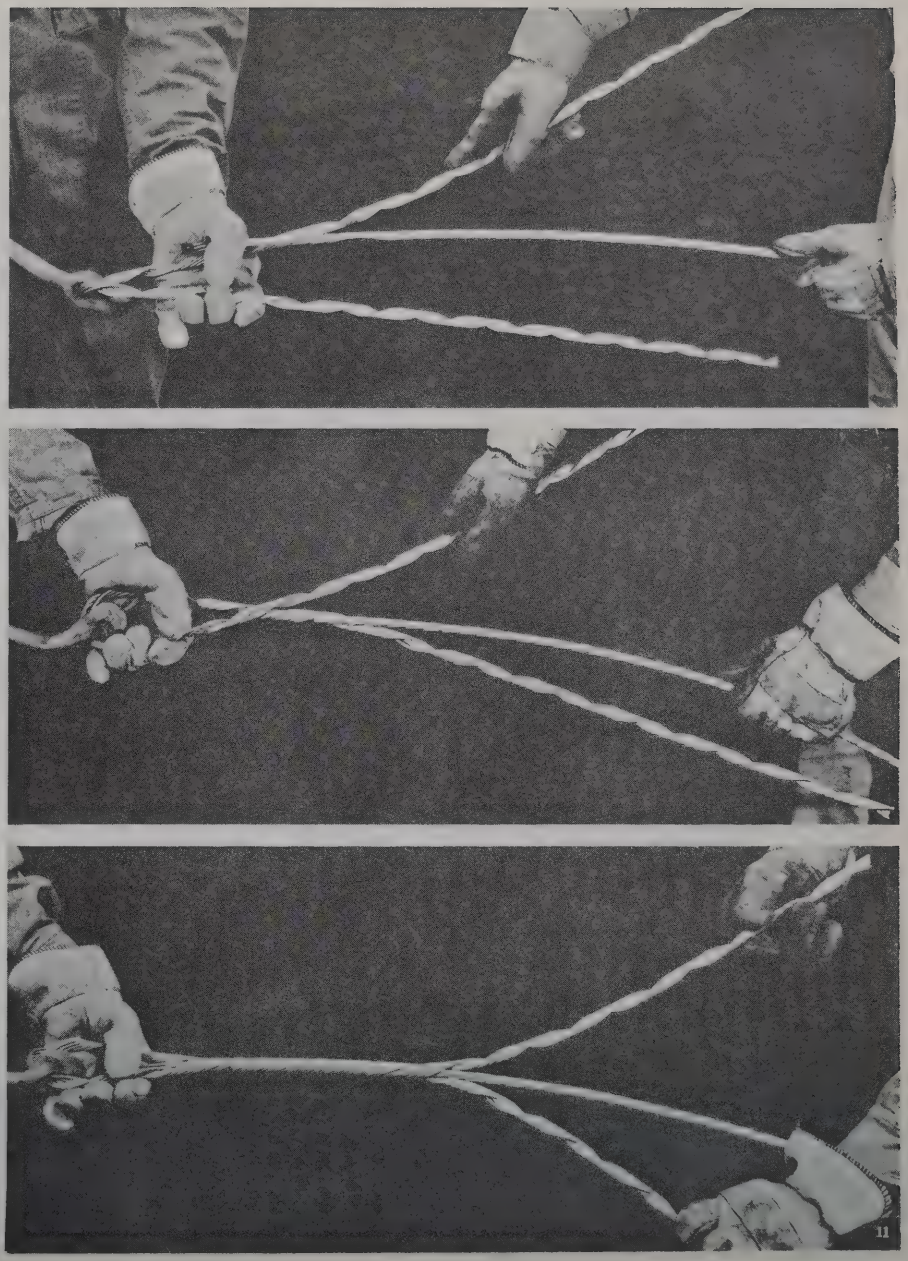
3. To apply the second leg

a. Squeeze the loop.

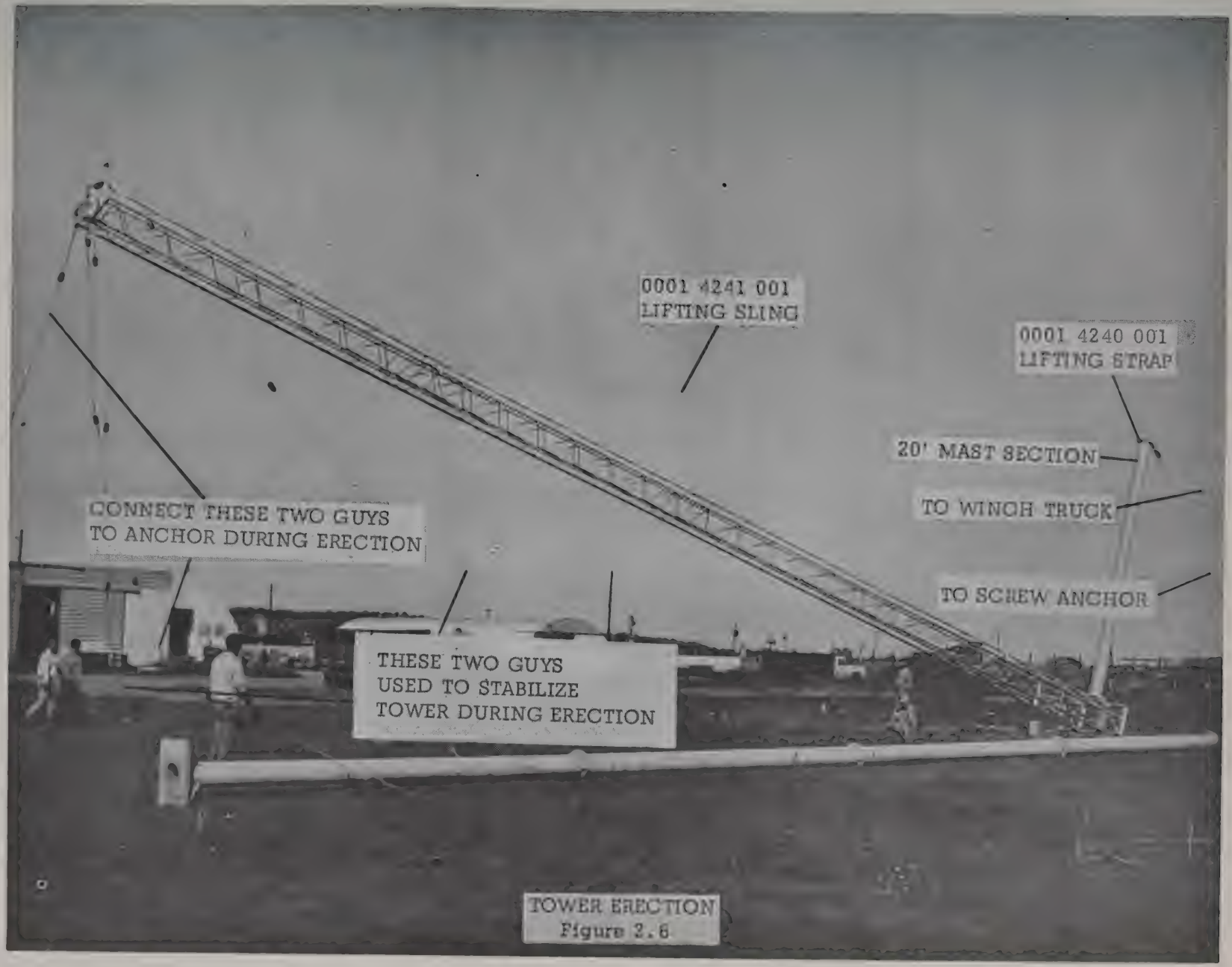
b. Match Crossover Marks.

c. Wrap on two or three pitches.

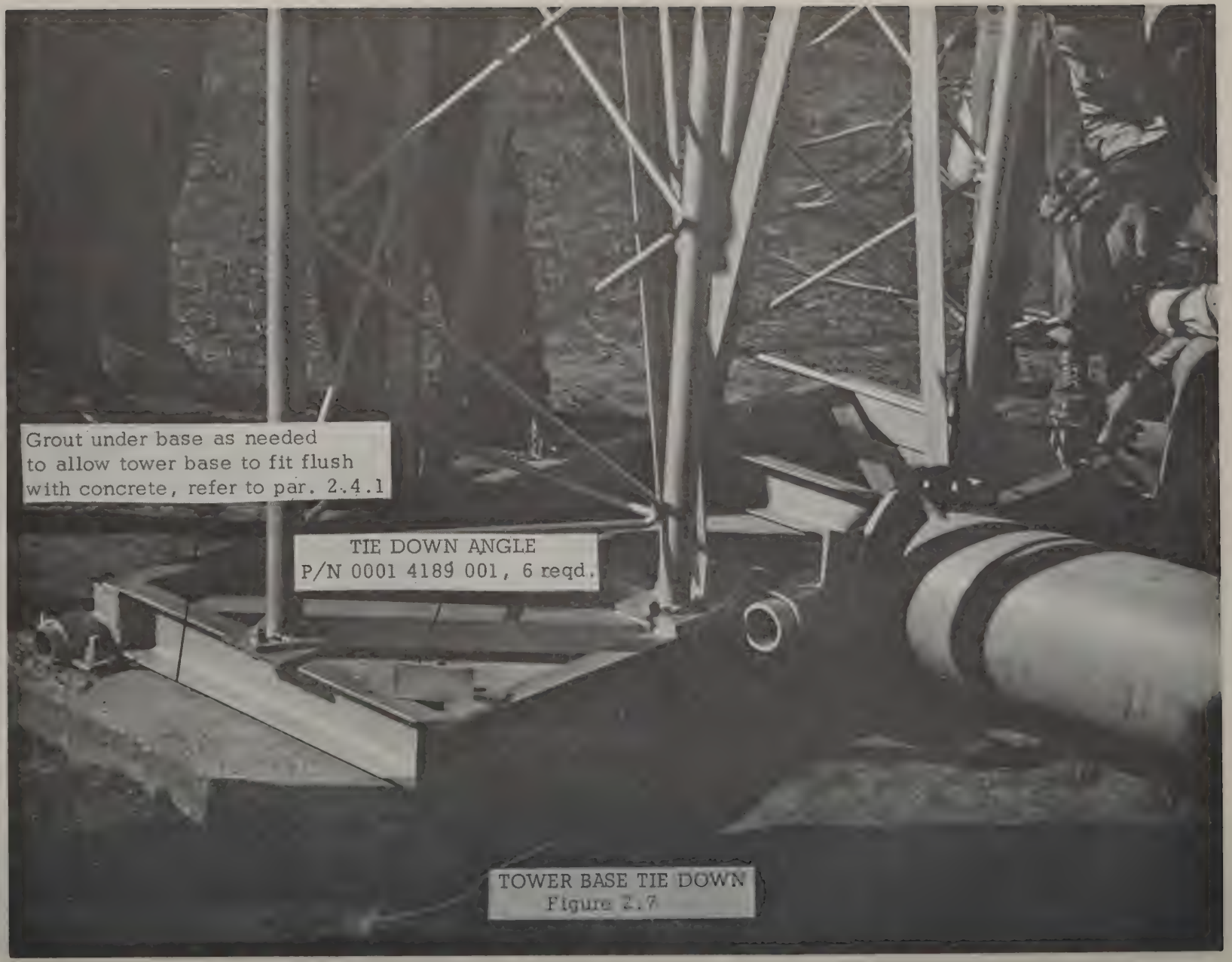
4. Continue the application by wrapping on both legs simultaneously, *except* for the last two or three pitches.



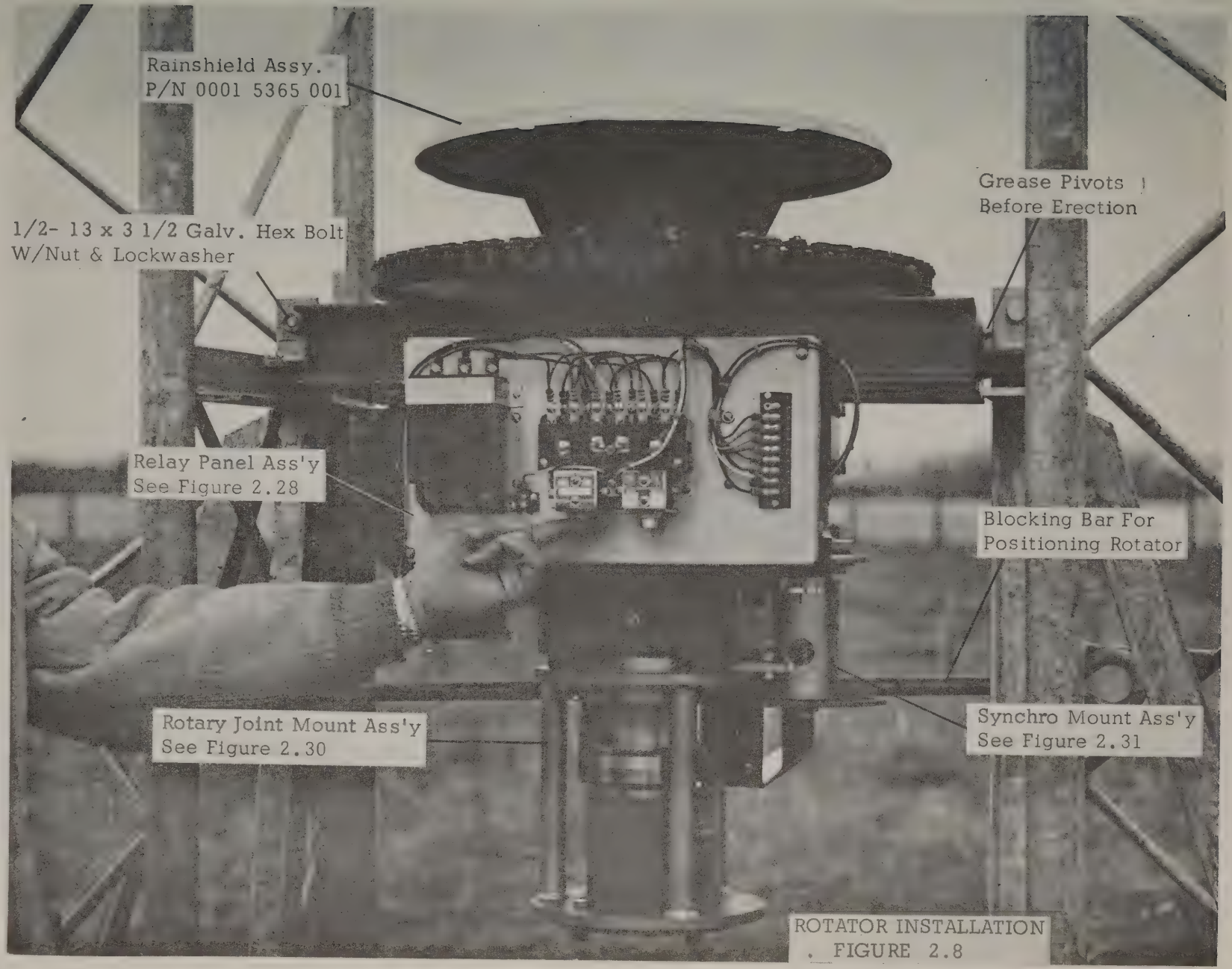
TYPICAL PREFORMED GUY GRIP INSTALLATION
Figure 2.5



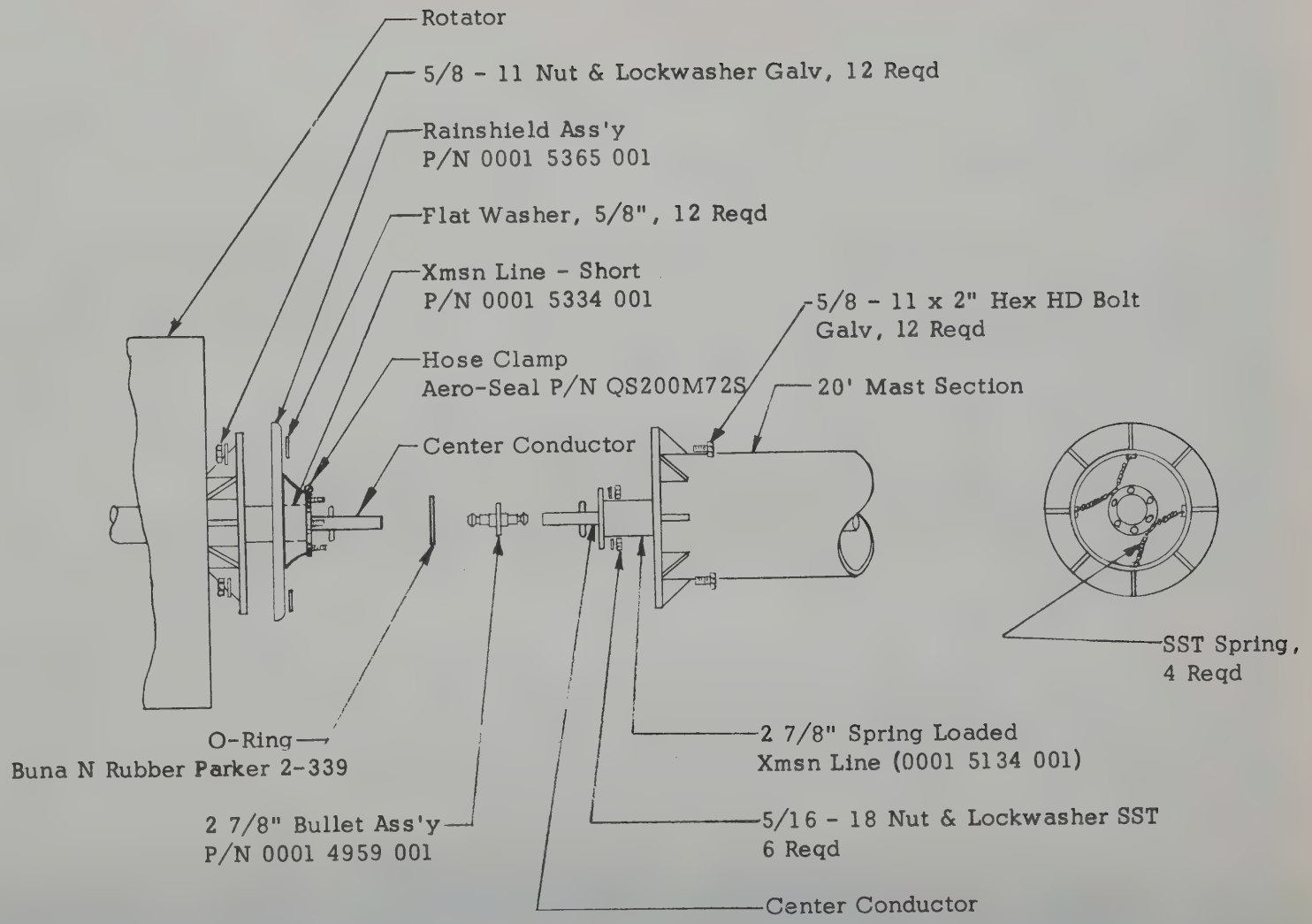
TOWER ERECTION
Figure 2.6


Grout under base as needed
to allow tower base to fit flush
with concrete, refer to par. 2.4.1
TIE DOWN ANGLE
P/N 0001 4189 001, 6 reqd.

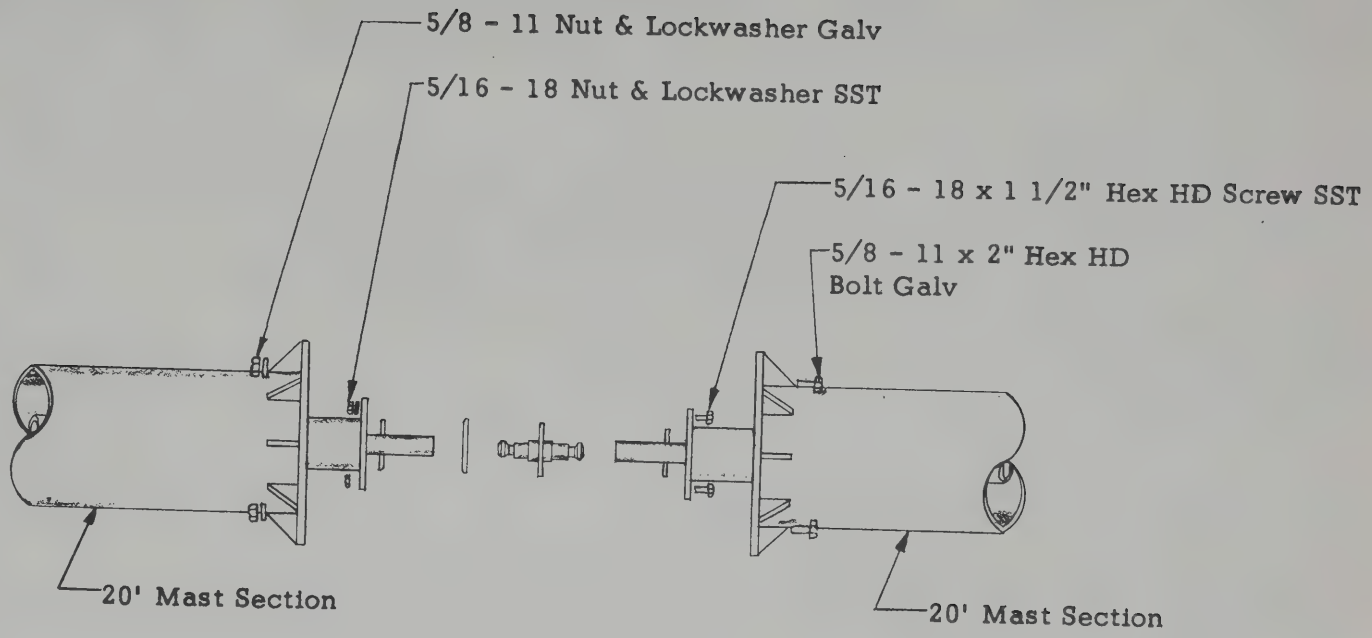
TOWER BASE TIE DOWN
Figure 2.7



ROTATOR INSTALLATION
FIGURE 2.8



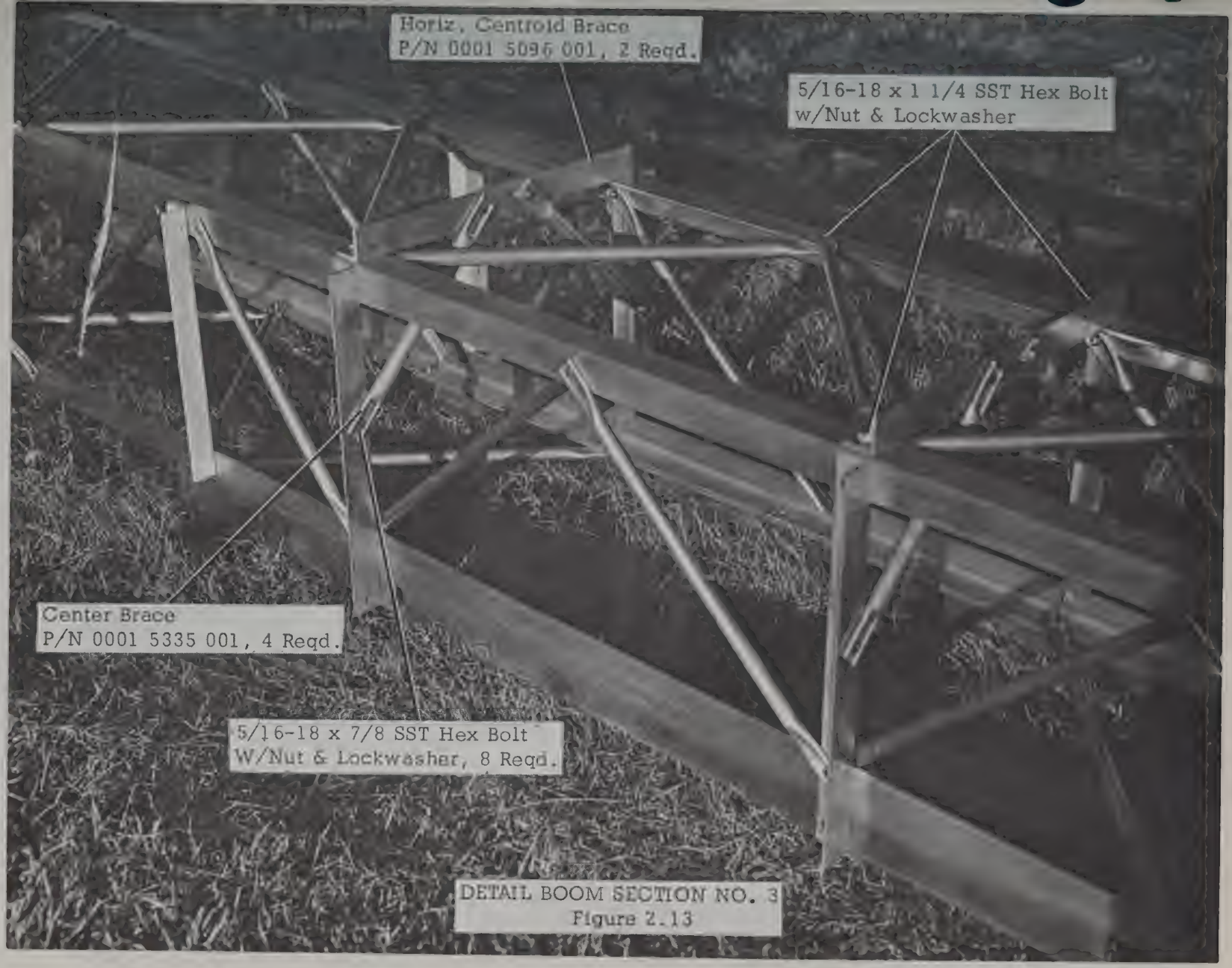
INSTALLATION - MAST TO ROTATOR
Figure 2.9


5/8 - 11 Nut & Lockwasher Galv
5/16 - 18 Nut & Lockwasher SST
5/16 - 18 x 1 1/2" Hex HD Screw SST
5/8 - 11 x 2" Hex HD
Bolt Galv
20' Mast Section
20' Mast Section

INSTALLATION - MAST TO MAST
Figure 2.10

Boom Half Section No. 2
P/N 0001 5131 001, 2 Reqd.
Element Mt. Angle No. 8 - 10
P/N 0001 5108 001, 4 Reqd.
Horiz. Brace No. 2
P/N 0001 5090 001, 30 Reqd.
5/16-18 x 1 SST Hex Bolt
W/Nut & Lockwasher, 28 Reqd.
Element Mt. Angle No. 1 - 7
P/N 0001 4977 001, 12 Reqd.
1/4-20 x 3/4 SST Hex Screw
W/Nut, Lockwasher & Flat
Washer, 24 Reqd.
1/4-20 x 7/8 SST Hex Screw
W/Nut, Lockwasher, & Flat
Washer, 8 Reqd.
Horiz. Brace No. 2
P/N 0001 5090 001, 28 Reqd.
5/16 - 18 x 1 1/4" SST Hex Bolt
w/Nut & Lockwasher, 27 Reqd
Element Mt. Angle No.8 - 10
P/N 0001 5108 001, 2 Reqd.
Boom Half Section No. 3B
P/N 0001 5129 001
Detail Boom Section No. 3
See Figure 2.13
Element Mt. Angle No. 11 - 13
P/N 0001 5109 001, 6 Reqd.
Boom Half Section No. 3A
P/N 0001 5127 001
1/4-20 x 1 SST Hex Screw w/Nut,
Lockwasher & Flat Washer

BOOM SECTION ASS'Y NO. 2
Figure 2.11


Horiz. Centroid Brace
P/N 0001 5096 001, 2 Reqd.
5/16-18 x 1 1/4 SST Hex Bolt
w/Nut & Lockwasher
Center Brace
P/N 0001 5335 001, 4 Reqd.
5/16-18 x 7/8 SST Hex Bolt
W/Nut & Lockwasher, 8 Reqd.

DETAIL BOOM SECTION NO. 3
Figure 2.13

Horiz. Brace No. 3
P/N 0001 5120 001, 2 Reqd
Boom Half Section No. 4
P/N 0001 5123 001, 2 Reqd
Element Mt. Angle No. 14
P/N 0001 5110 001, 2 Reqd
5/16 - 18 x 7/8" SST Hex Bolt
w/Nut & Lockwasher, 2 Reqd
5/16 - 18 x 1 1/4" SST Hex Bolt
w/Nut & Lockwasher, 28 Reqd
Element Mt. Angle No. 15
P/N 0001 5111 001, 2 Reqd
Horiz. Brace No. 2
P/N 0001 5090 001, 30 Reqd
Element Mt. Angle No. 16
P/N 0001 5112 001, 2 Reqd
1/4 x 20 x 1" SST Hex Screw
w/Nut, Lockwasher, & Flat Washer
5/16 - 18 x 7/8" SST Hex Bolt
w/Nut & Lockwasher, 4 Reqd
3/8 - 16 x 7/8" SST Hex Bolt
w/Nut & Lockwasher, 8 Reqd
0001 5123 001 FRONT

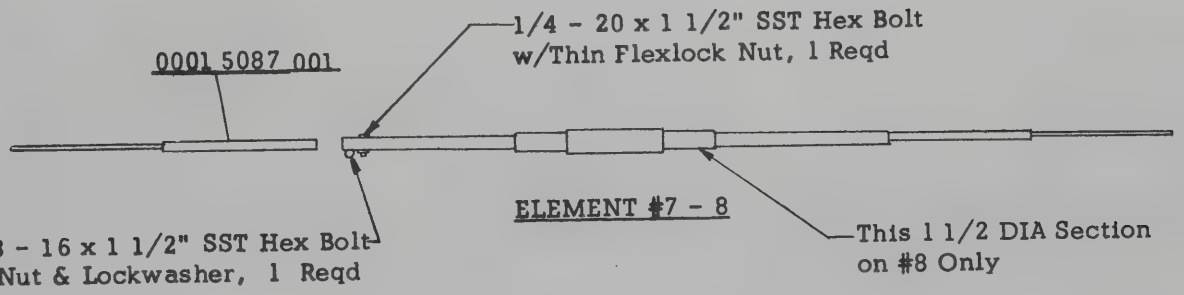
BOOM SECTION JOINT
NO. 2 - 1
Figure 2.15

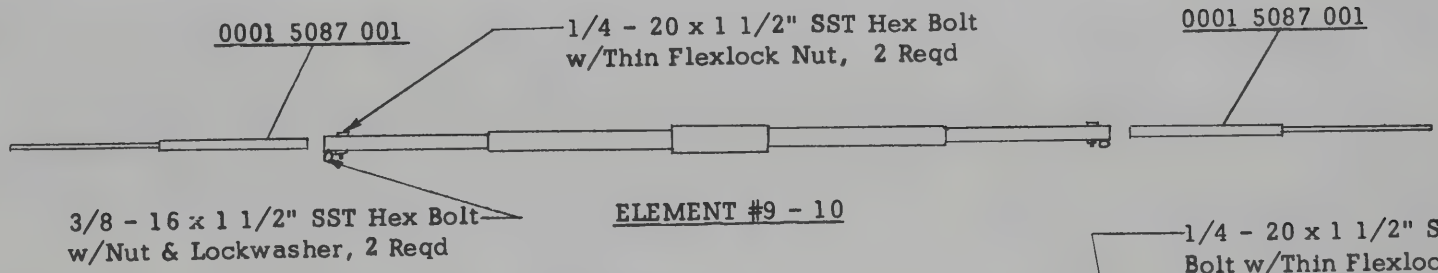
Boom Section No. 2
Boom Section No. 3
3/8-16 x 1 SST Hex HD
W/Nut & Lockwasher, 32 Reqd.
5/16-18 x 1 1/4 SST Hex Bolt
W/Nut & Lockwasher, 4 Reqd.
3/8 - 16 x 1 1/4" SST Hex Bolt
w/Nut & Lockwasher, 32 Reqd
5/16 - 18 x 1 1/4" SST Hex Bolt
w/Nut & Lockwasher, 4 Reqd
Boom Section No. 3
Boom Section No. 4

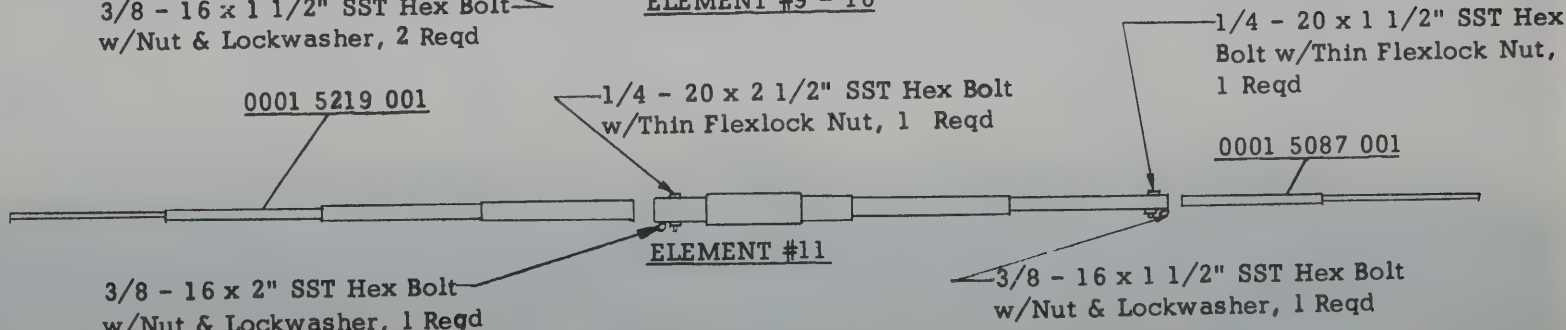
BOOM SECTION JOINT
NO. 4 - 3
Figure 2.17

ELEMENT #1 - 6

NOTE: Elements #1 - 6 are completely assembled.

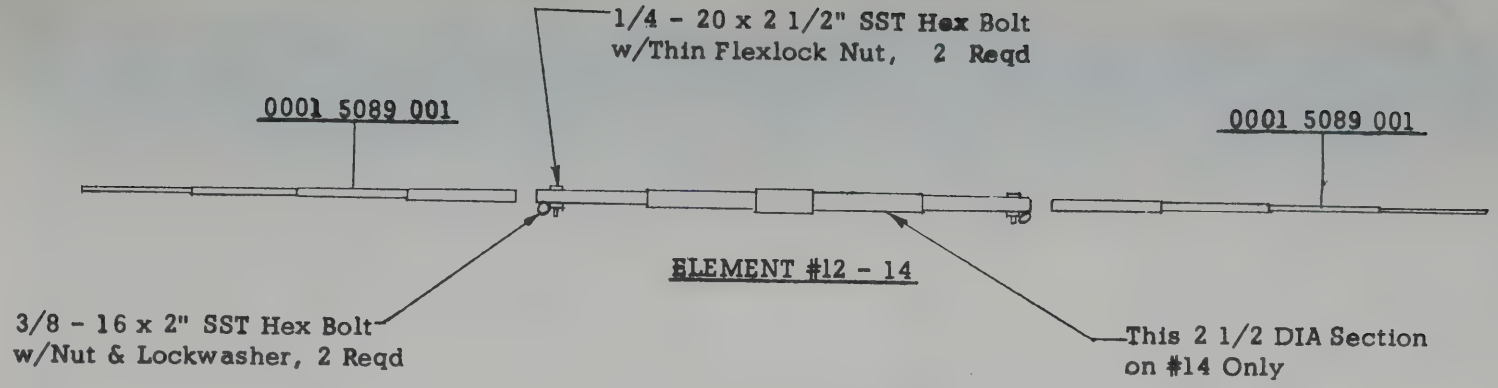

0001 5087 001
1/4 - 20 x 1 1/2" SST Hex Bolt
w/Thin Flexlock Nut, 1 Reqd
ELEMENT #7 - 8
3/8 - 16 x 1 1/2" SST Hex Bolt
w/Nut & Lockwasher, 1 Reqd
This 1 1/2 DIA Section
on #8 Only

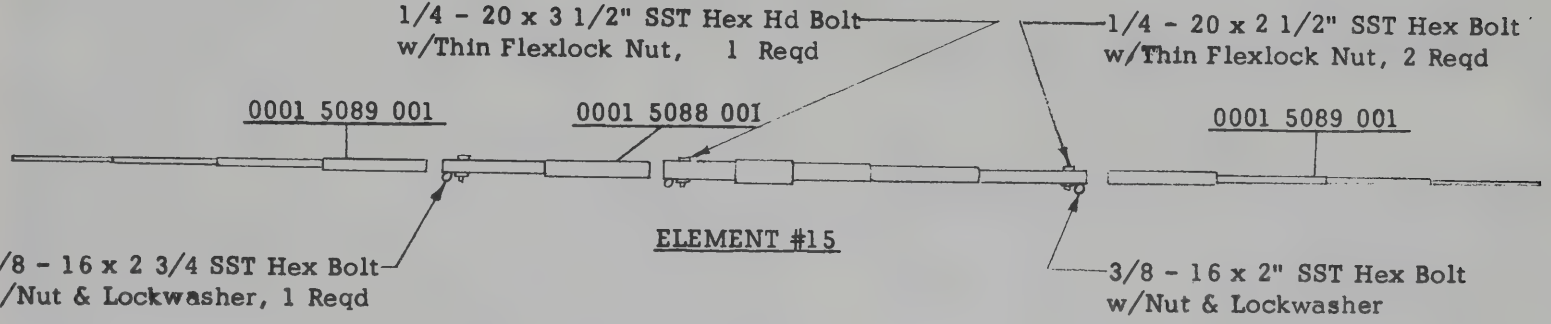

0001 5087 001
1/4 - 20 x 1 1/2" SST Hex Bolt
w/Thin Flexlock Nut, 2 Reqd
0001 5087 001
3/8 - 16 x 1 1/2" SST Hex Bolt
w/Nut & Lockwasher, 2 Reqd
ELEMENT #9 - 10

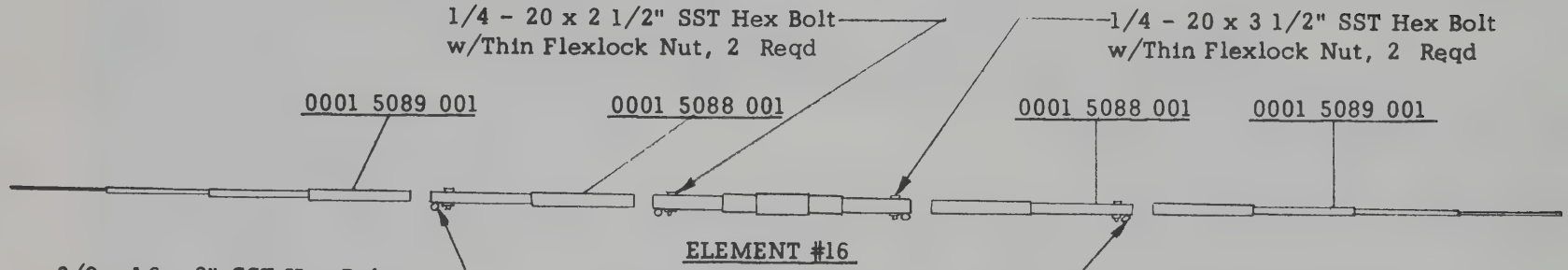

1/4 - 20 x 1 1/2" SST Hex
Bolt w/Thin Flexlock Nut,
1 Reqd
0001 5219 001
1/4 - 20 x 2 1/2" SST Hex Bolt
w/Thin Flexlock Nut, 1 Reqd
0001 5087 001
ELEMENT #11
3/8 - 16 x 2" SST Hex Bolt
w/Nut & Lockwasher, 1 Reqd
3/8 - 16 x 1 1/2" SST Hex Bolt
w/Nut & Lockwasher, 1 Reqd

ELEMENT ASSEMBLIES
Figure 2.20A

NOTE: ALIGN DRAIN HOLES

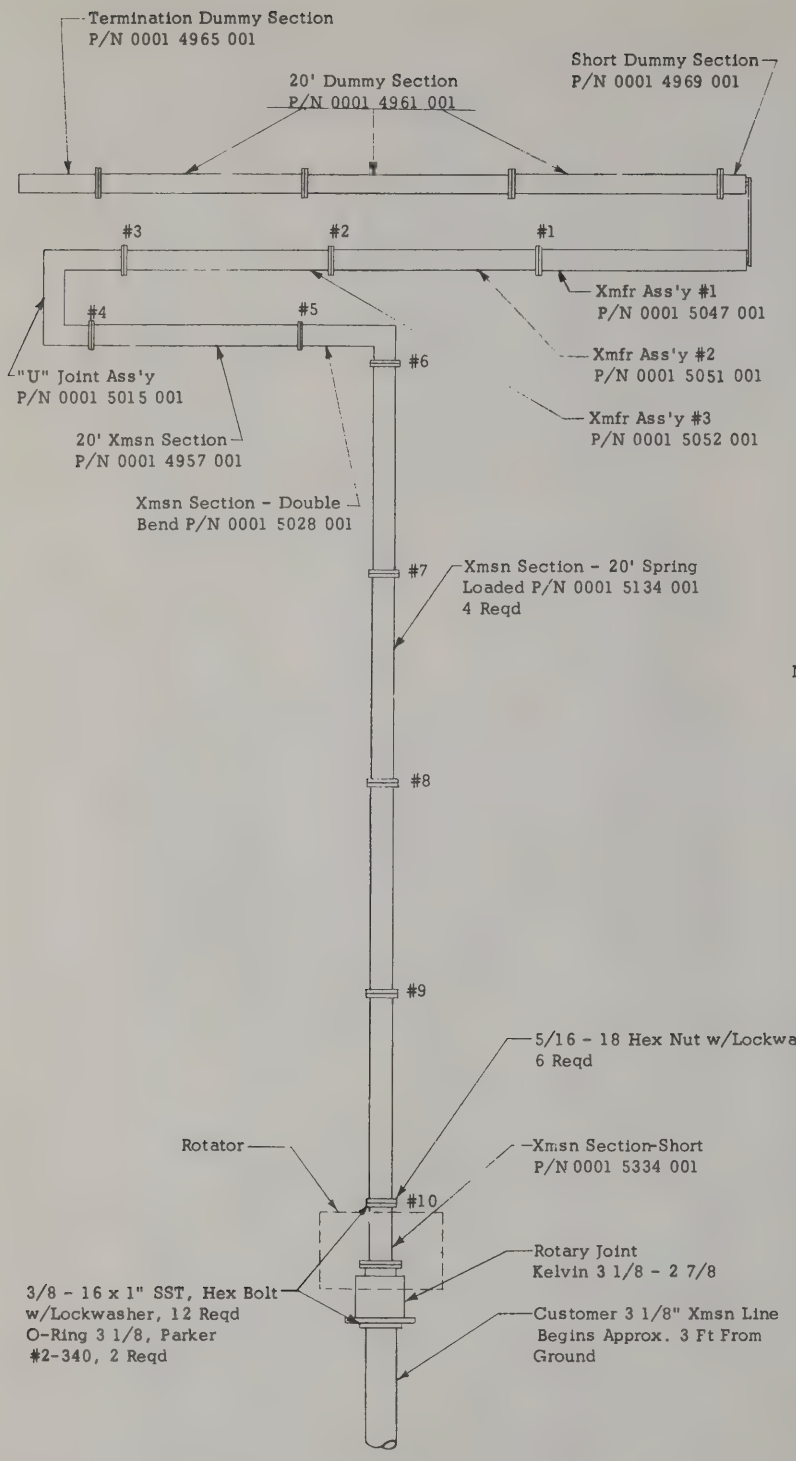

1/4 - 20 x 2 1/2" SST Hex Bolt
w/Thin Flexlock Nut, 2 Reqd
0001 5089 001
0001 5089 001
ELEMENT #12 - 14
3/8 - 16 x 2" SST Hex Bolt
w/Nut & Lockwasher, 2 Reqd
This 2 1/2 DIA Section
on #14 Only


1/4 - 20 x 3 1/2" SST Hex Hd Bolt
w/Thin Flexlock Nut, 1 Reqd
1/4 - 20 x 2 1/2" SST Hex Bolt
w/Thin Flexlock Nut, 2 Reqd
0001 5089 001
0001 5088 001
0001 5089 001
ELEMENT #15
3/8 - 16 x 2 3/4 SST Hex Bolt
w/Nut & Lockwasher, 1 Reqd
3/8 - 16 x 2" SST Hex Bolt
w/Nut & Lockwasher


1/4 - 20 x 2 1/2" SST Hex Bolt
w/Thin Flexlock Nut, 2 Reqd
1/4 - 20 x 3 1/2" SST Hex Bolt
w/Thin Flexlock Nut, 2 Reqd
0001 5089 001
0001 5088 001
0001 5088 001
0001 5089 001
ELEMENT #16
3/8 - 16 x 2" SST Hex Bolt
w/Nut & Lockwasher, 2 Reqd
3/8 - 16 x 2 3/4 Hex Bolt
w/Nut & Lockwasher, 2 Reqd

ELEMENT ASSEMBLIES
Figure 2.20B

NOTE: ALIGN DRAIN HOLES



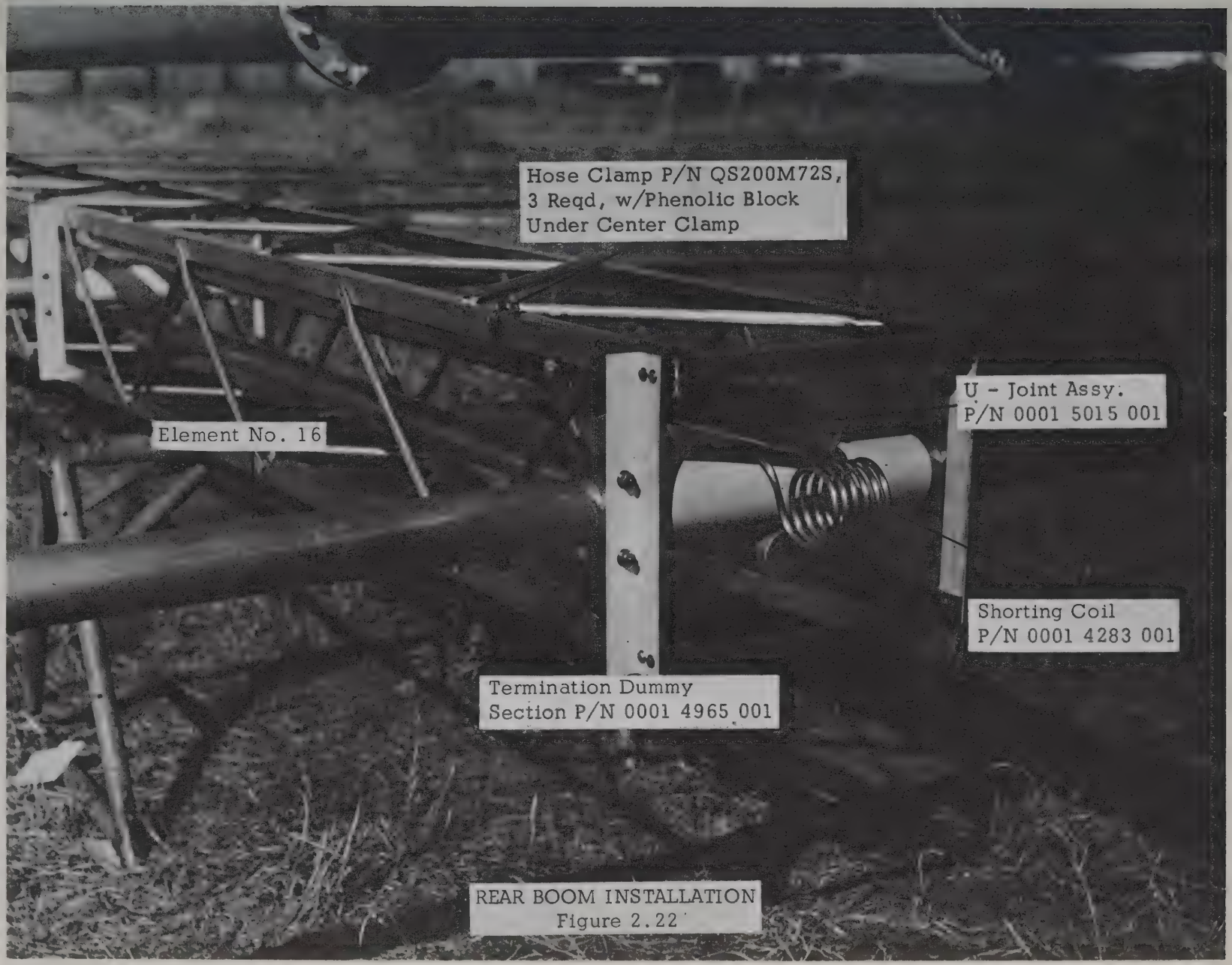
NOTES: (1) All Flanges (Except as Noted) Will Connect With 6 Ea, 5/16-18 x 1 1/2" SST Hex Hd Bolt & Nuts, Lockwashers.

(2) All Bullet Ass'y's (Except as Noted) Use a Parker #2-339 O-Ring At Each Joint

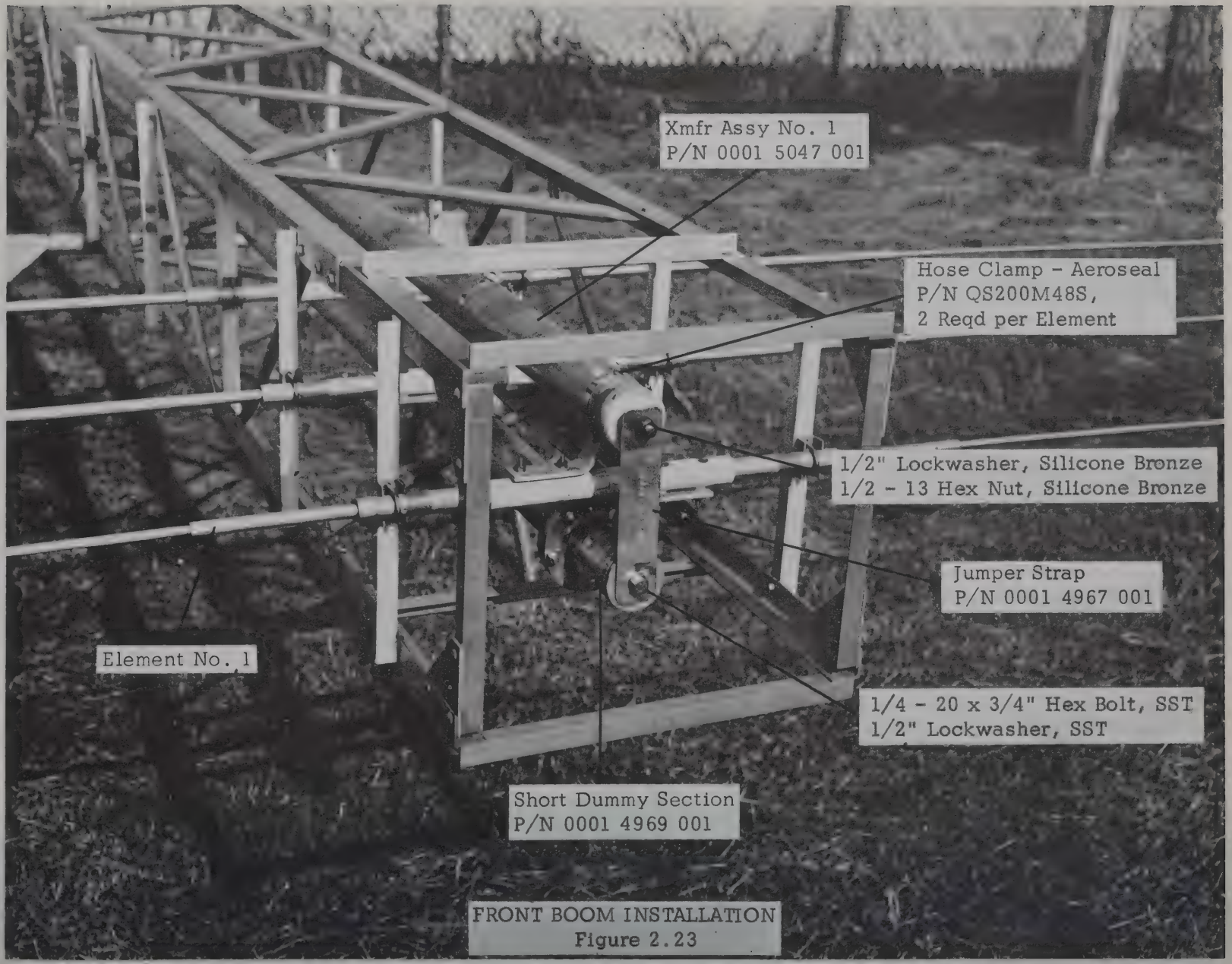
JOINT NO	PART NO.	NAME
1	0001 5053 001	Bullet Ass'y #1
2	0001 5054 001	Bullet Ass'y #2
3	0001 5055 001	Bullet Ass'y #3
4	0001 4959 001	Bullet Ass'y 2 7/8
5		
6		
7		
8		
9		
10	0001 4959 001	Bullet Ass'y 2 7/8

XMSN LINE AND DUMMY LINE INSTALLATION

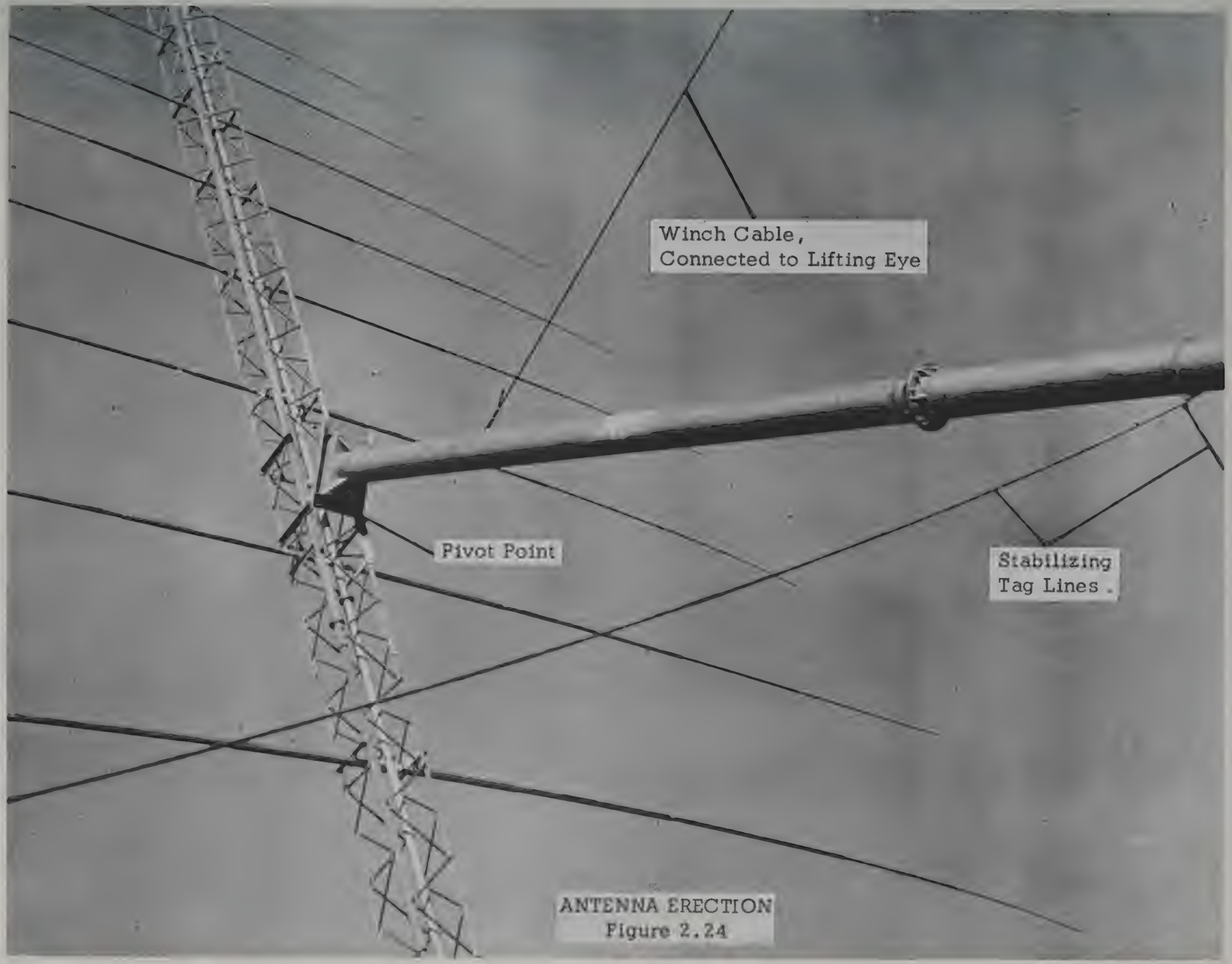
Figure 2.21



REAR BOOM INSTALLATION
Figure 2.22

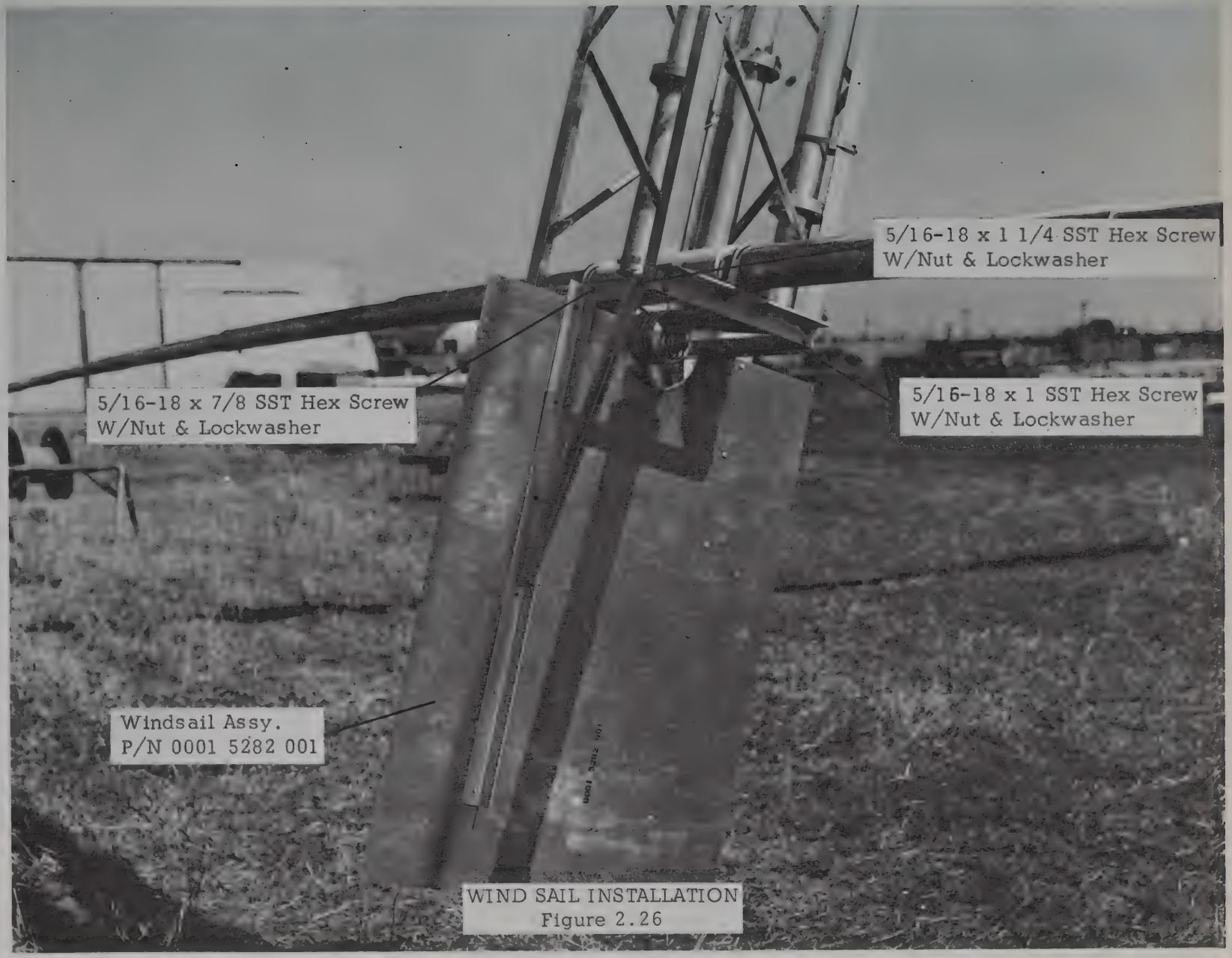

Xmfr Assy No. 1
P/N 0001 5047 001
Hose Clamp - Aeroseal
P/N QS200M48S,
2 Reqd per Element
1/2" Lockwasher, Silicone Bronze
1/2 - 13 Hex Nut, Silicone Bronze
Jumper Strap
P/N 0001 4967 001
Element No. 1
1/4 - 20 x 3/4" Hex Bolt, SST
1/2" Lockwasher, SST
Short Dummy Section
P/N 0001 4969 001

FRONT BOOM INSTALLATION
Figure 2.23

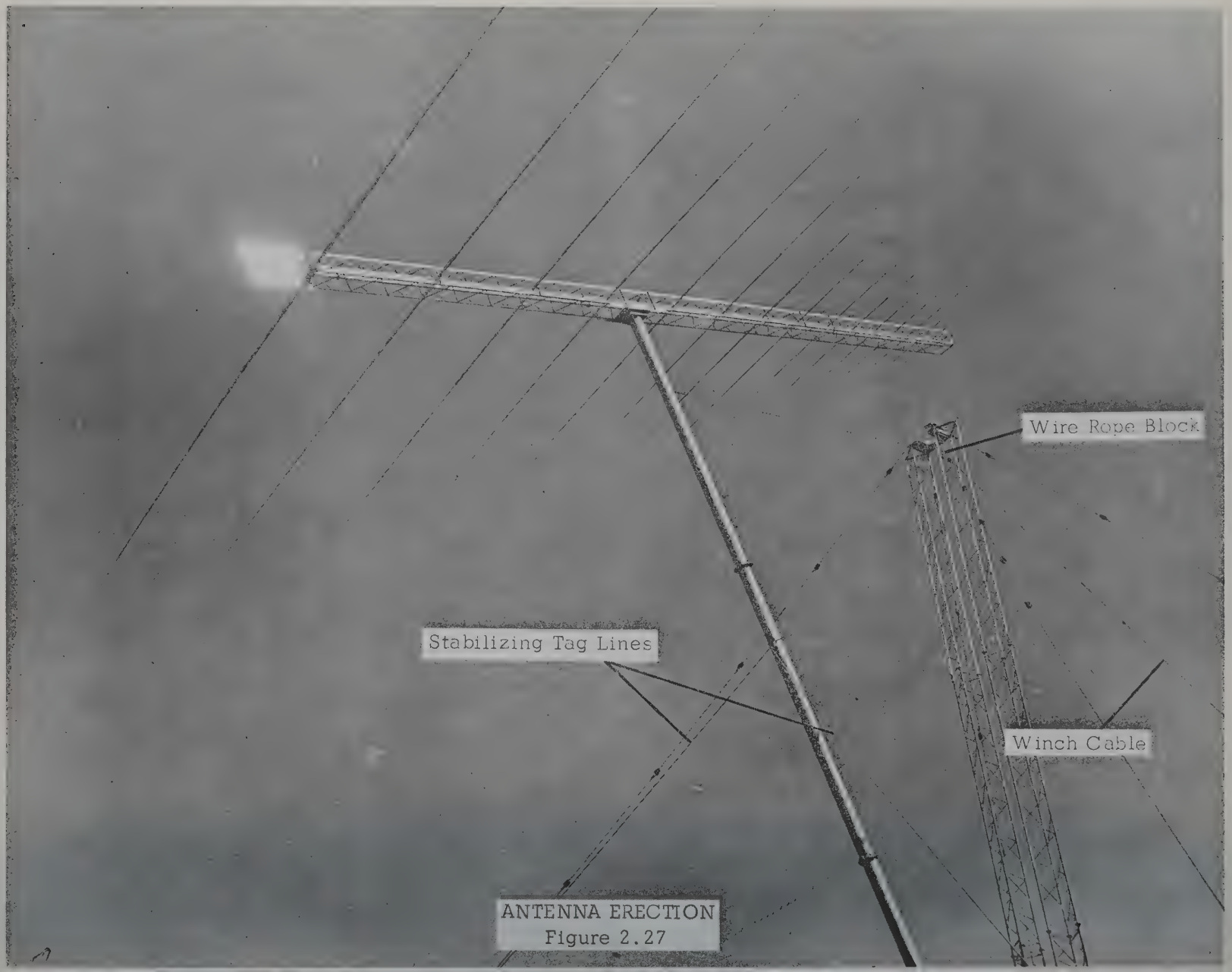


ANTENNA ERECTION
Figure 2.24

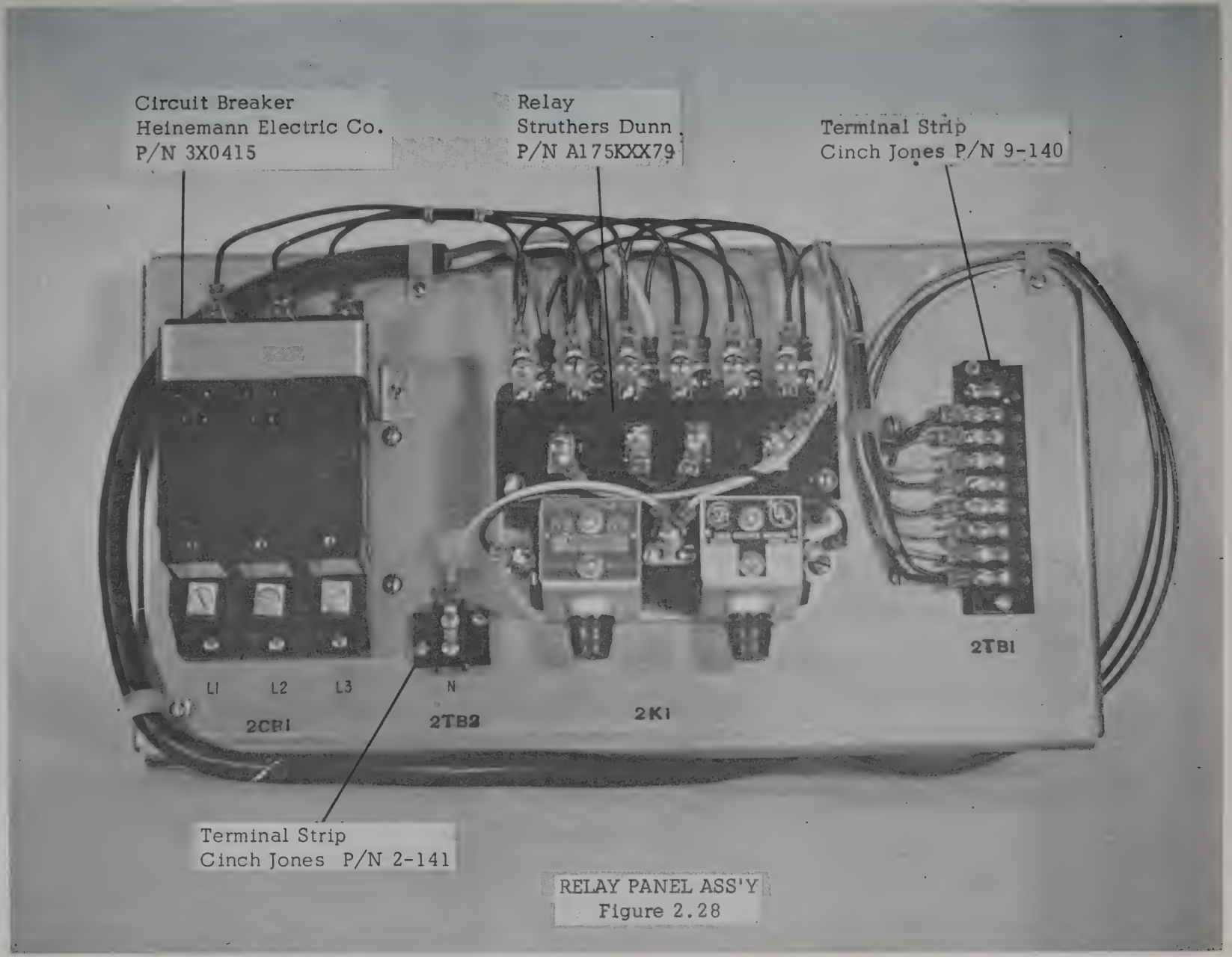
MAST TO BOOM INSTALLATION
Figure 2.25


5/16-18 x 1 1/4 SST Hex Screw
W/Nut & Lockwasher
5/16-18 x 7/8 SST Hex Screw
W/Nut & Lockwasher
5/16-18 x 1 SST Hex Screw
W/Nut & Lockwasher
Windsail Assy.
P/N 0001 5282 001

WIND SAIL INSTALLATION
Figure 2.26

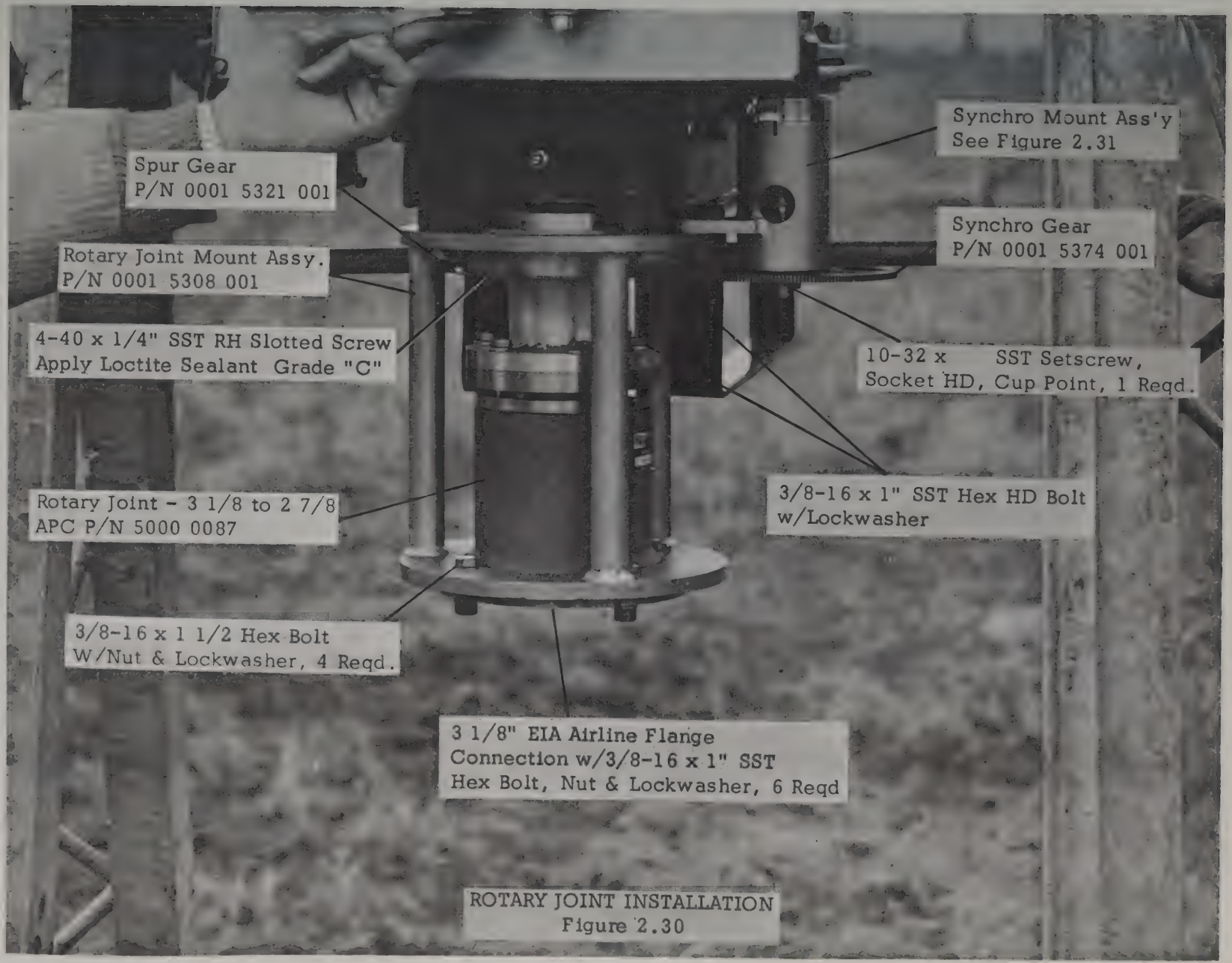


ANTENNA ERECTION
Figure 2.27

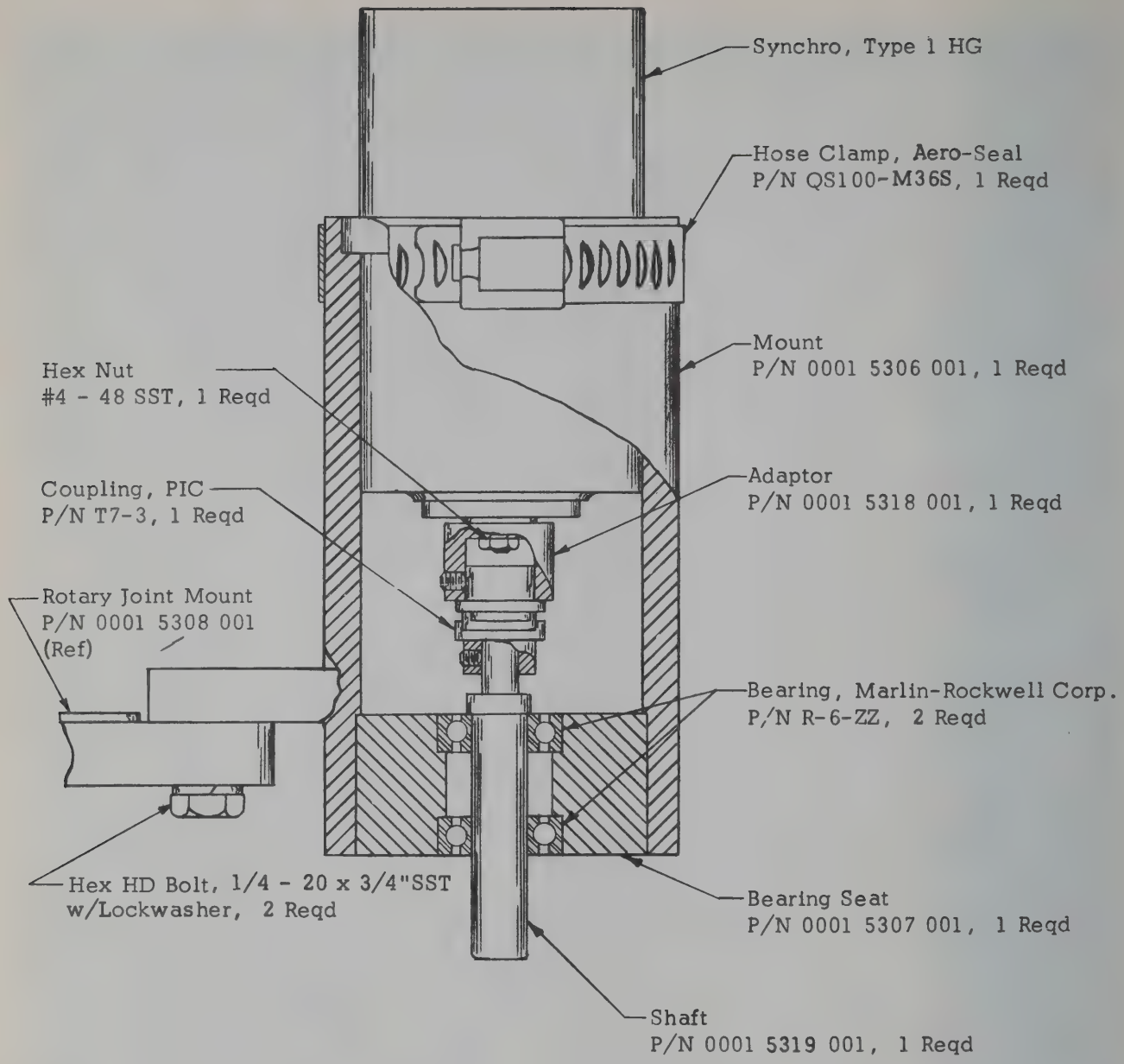


RELAY PANEL ASS'Y
Figure 2.28

ANTENNA CONTROL
Figure 2.29


Synchro Mount Ass'y
See Figure 2.31
Spur Gear
P/N 0001 5321 001
Synchro Gear
P/N 0001 5374 001
Rotary Joint Mount Assy.
P/N 0001 5308 001
4-40 x 1/4" SST RH Slotted Screw
Apply Loctite Sealant Grade "C"
10-32 x SST Setscrew,
Socket HD, Cup Point, 1 Reqd.
3/8-16 x 1" SST Hex HD Bolt
w/Lockwasher
Rotary Joint - 3 1/8 to 2 7/8
APC P/N 5000 0087
3/8-16 x 1 1/2 Hex Bolt
W/Nut & Lockwasher, 4 Reqd.
3 1/8" EIA Airline Flange
Connection w/3/8-16 x 1" SST
Hex Bolt, Nut & Lockwasher, 6 Reqd

ROTARY JOINT INSTALLATION
Figure 2.30



SYNCHRO MOUNT ASS'Y
Figure 2.31

3.0. Principles of Operation

3.1. Introduction

The LPH-10 is basically a log periodic dipole antenna. The theory of such an antenna is described in 3.2. Reference to Figure 3.1 will aid in understanding the explanation.

The LPH-10 rotator is a self seeking type whose operation is explained in 3.3. The schematic is Figure 3.2 and should be referred to for a better understanding of the written material.

3.2. Electrical

The LPH-10 Log Periodic Antenna is formed of 16 dipole elements, each of which is different length. These elements are connected to a balanced transmission line in order of length. The arrangement is such that the length of each element is approximately 88% that of its next larger neighbor and the spacing between any two elements is 88% of the next larger, neighboring space. Thus, the dimensions along the antenna vary in a logarithmic manner. This means that any portion of the antenna is simply a scale model of any other portion.

If such a portion is taken as the group of elements which are near resonance, and therefore active, it is easy to see how the antenna can have constant characteristics over the frequency range for which it is designed. For this ideal situation to be achieved it is necessary that each element become active only once as the frequency is varied over the band; otherwise the scaling principle, explained above, will not be adhered to.

Dipole antennas can have multiple resonances or "modes" that will capture or radiate RF energy. The simplest (first order) mode is the half wave mode. The dipole can also resonate in higher modes such as 3/2, 5/2, 7/2 wavelengths, etc. The radiation patterns of these higher modes are not the same as that of the 1/2 wave mode. The active elements of the LPH-10 Antenna operate in the 1/2 wave mode.

Because of the possibility of higher mode resonance, it is necessary that no energy sweep past elements, which are longer than 1/2 wave length, via the transmission line or by radiation. To meet this condition no energy must enter or leave the antenna by the rear (large element) end.

On the other hand, elements which are shorter than 1/2 wave length can not resonate and therefore have little, if any, effect on a passing RF wave. This means that a frequency independent log periodic antenna must be fed from, and radiate toward, the small element end.

Although the LPH-10 input connector is located at the rear of the antenna, RF energy is contained within the coax line until it reaches the front of the antenna. At this point the coax center conductor is connected to the outer conductor of the dummy line and the outer conductor of the coax is simply stopped. Current from the center conductor naturally flows onto the dummy line. The total current flowing on the inside of the coax outer

conductor, folds over and flows back down the outside of the outer conductor, since it has nowhere else to go. Thus, a non-frequency sensitive unbalanced-to-balanced transformation takes place. Energy is transmitted from the front of the antenna to the radiating elements by the balanced line, composed of the outer conductor of the dummy and coax lines. Because the phase is reversed between each element pair (by crisscross connection) the direction of radiation is redirected toward the front of the antenna. Thus all the basic requirements for frequency independence are met.

The balanced feed point impedance of the antenna is approximately 80 ohms. In order to match this impedance to the desired 50 ohm input, a tapered coaxial transformer is incorporated. This is a multiple section impedance transformer which consists of a step tapered center conductor inserted in the coaxial line which extends from the rear of the antenna to the feed point. Because the taper is gradual and of optimum proportions it provides an impedance match for 80 to 50 ohms over the broad frequency band, covered by the antenna.

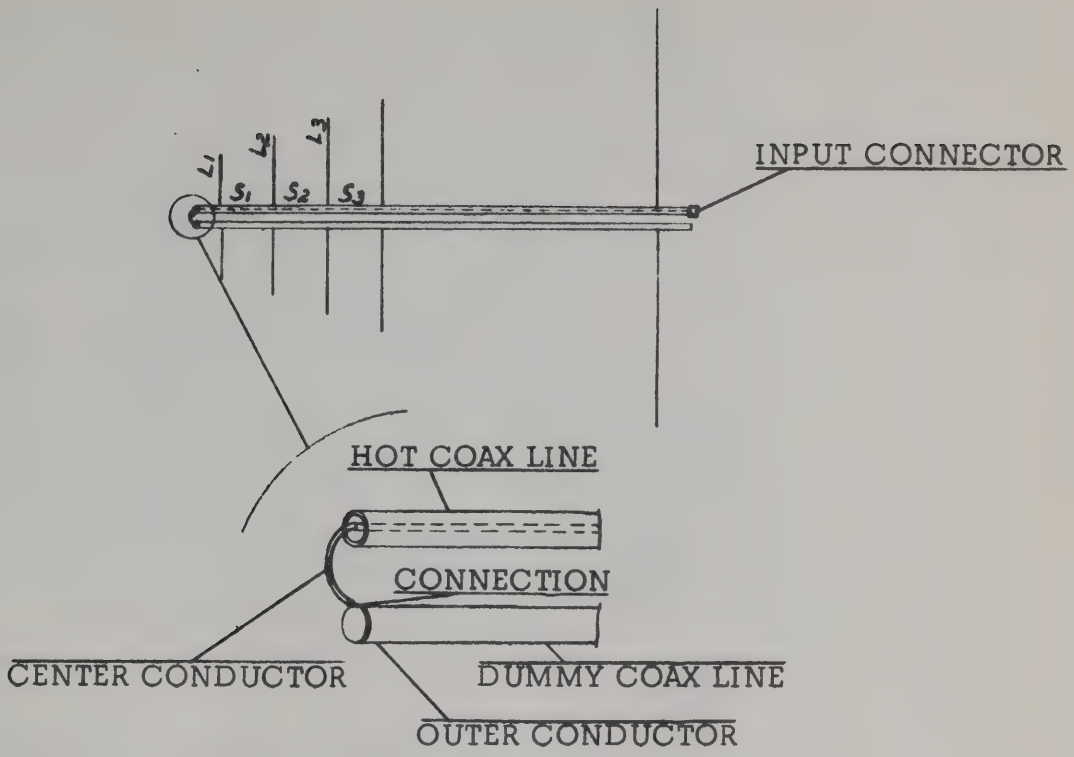
3.3. Mechanical

The rotator utilized in the LPH-10 will position the antenna in any azimuth direction desired. The rotator contains a synchro transmitter connected directly to the synchro receiver in the control unit. The control unit run-stop switch activates the 3 phase motor in the rotator. To position the antenna to a desired heading, the operator must only activate the run-stop switch, watch the indicator for azimuth heading, and release the switch when this heading is reached.

When the switch is not activated the only power transmitted to the rotator is to operate the synchro. Therefore, if the antenna direction is changed, say, because of high winds, the new heading will be indicated on the control unit indicator. The operator must reposition the antenna by activating the switch. This action is not probable and is mentioned only to explain the operation of the equipment.

NOTE

As a general rule, it is good practice, though not mandatory, to avoid transmitting when the antenna is positioning itself. This will extend the life of the rotating coaxial joint.



ANTENNA THEORY ILLUSTRATION
FIGURE 3.1

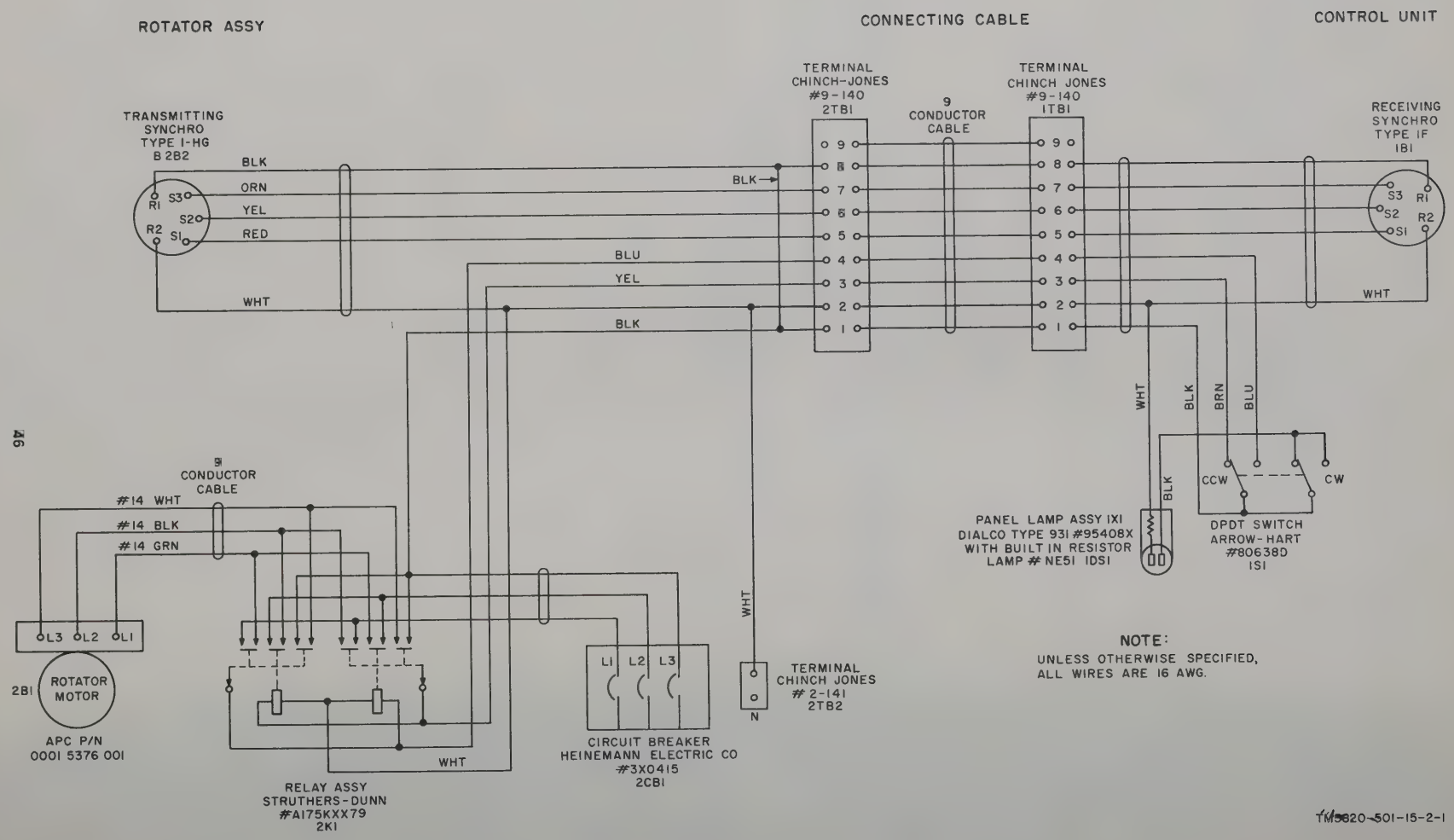
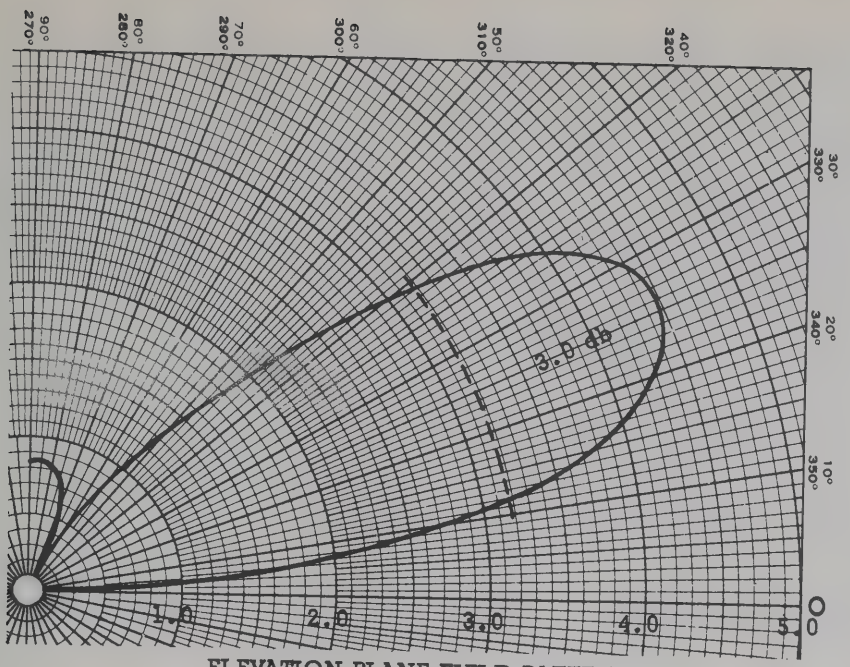
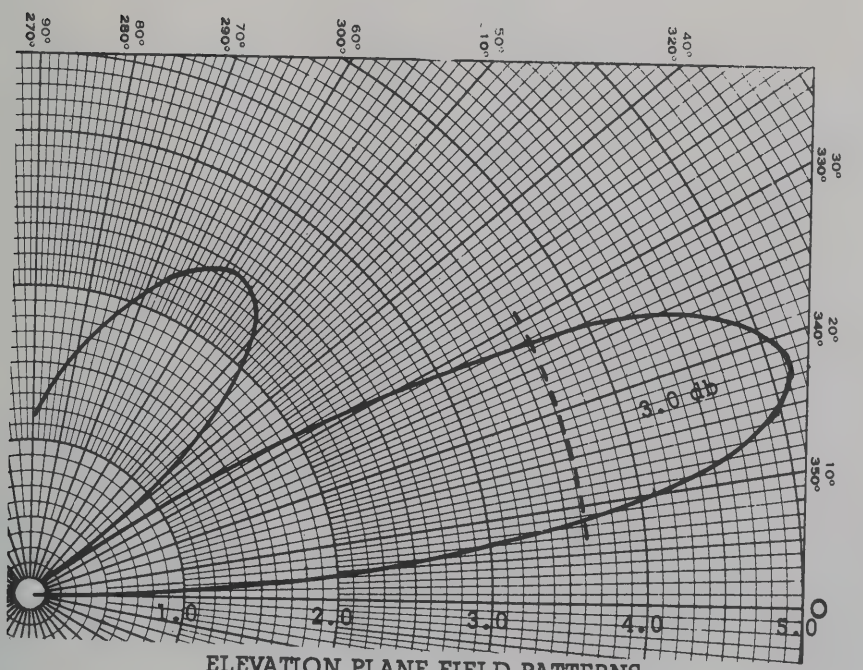


FIGURE 3.2. ANTENNA GROUP AN/FRA-53B, SCHEMATIC DIAGRAM.



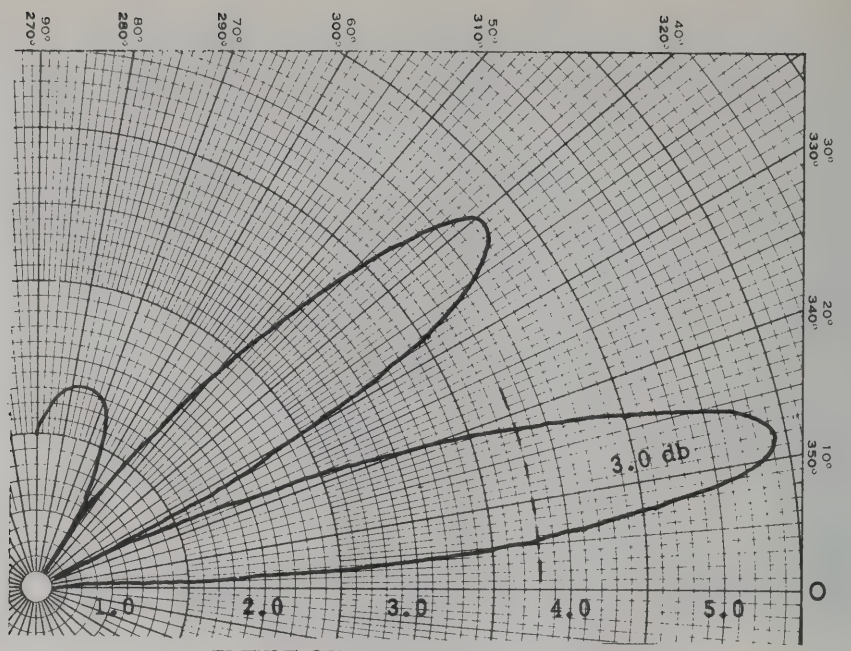
ELEVATION PLANE FIELD PATTERNS
6.5 MC/S



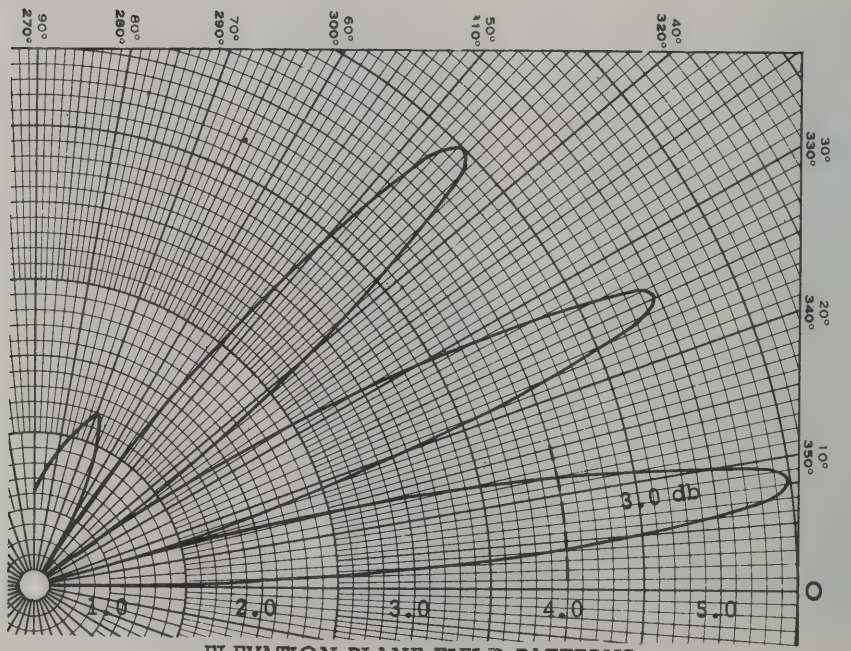
ELEVATION PLANE FIELD PATTERNS
9.0 MC/S

RELATIVE FIELD STRENGTH
ABOVE ISOTROPIC - AVERAGE
GROUND CONDITIONS

RADIATION PATTERNS
Figure 33A



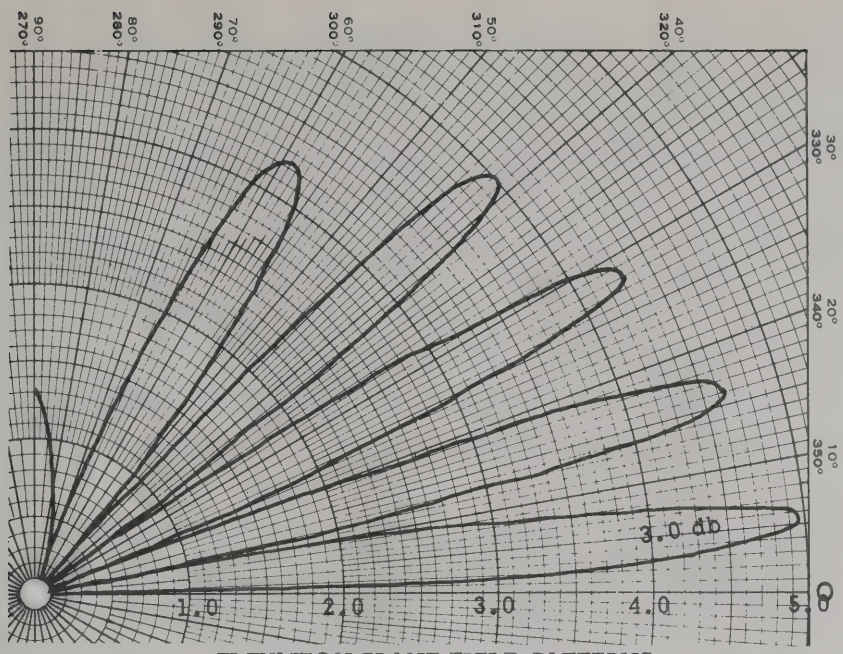
ELEVATION PLANE FIELD PATTERNS
13.5 MC/S



ELEVATION PLANE FIELD PATTERNS
20.0 MC/S

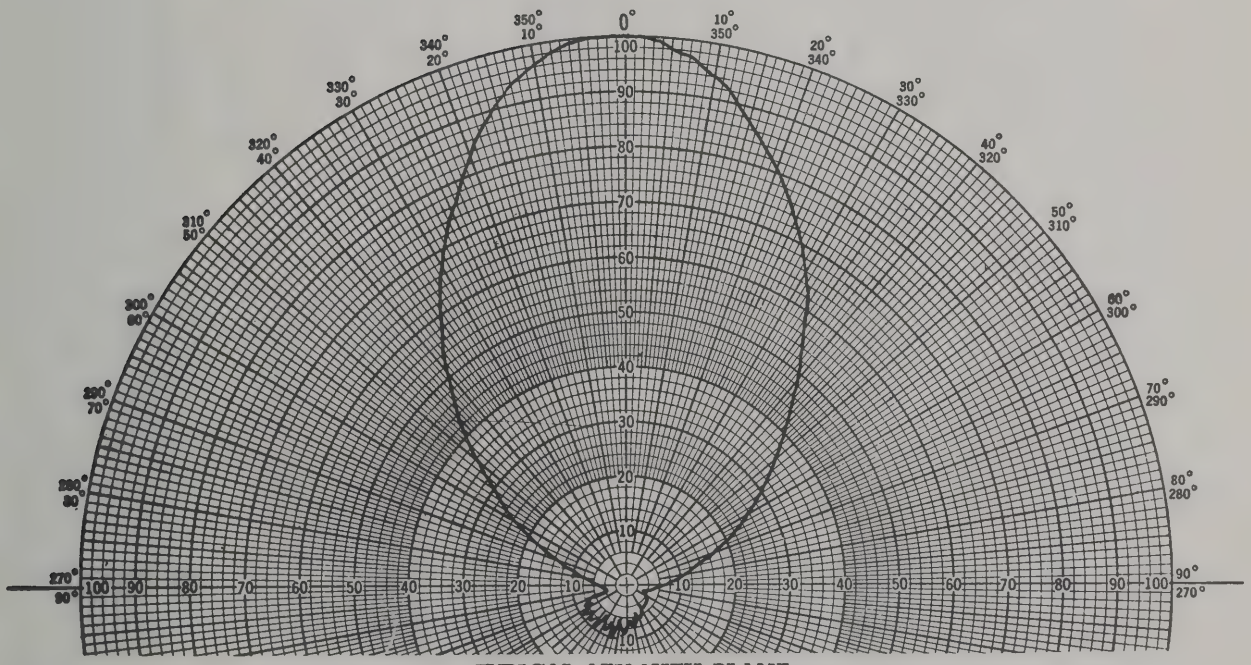
RELATIVE FIELD STRENGTH
ABOVE ISOTROPIC - AVERAGE
GROUND CONDITIONS

RADIATION PATTERNS
Figure 33B



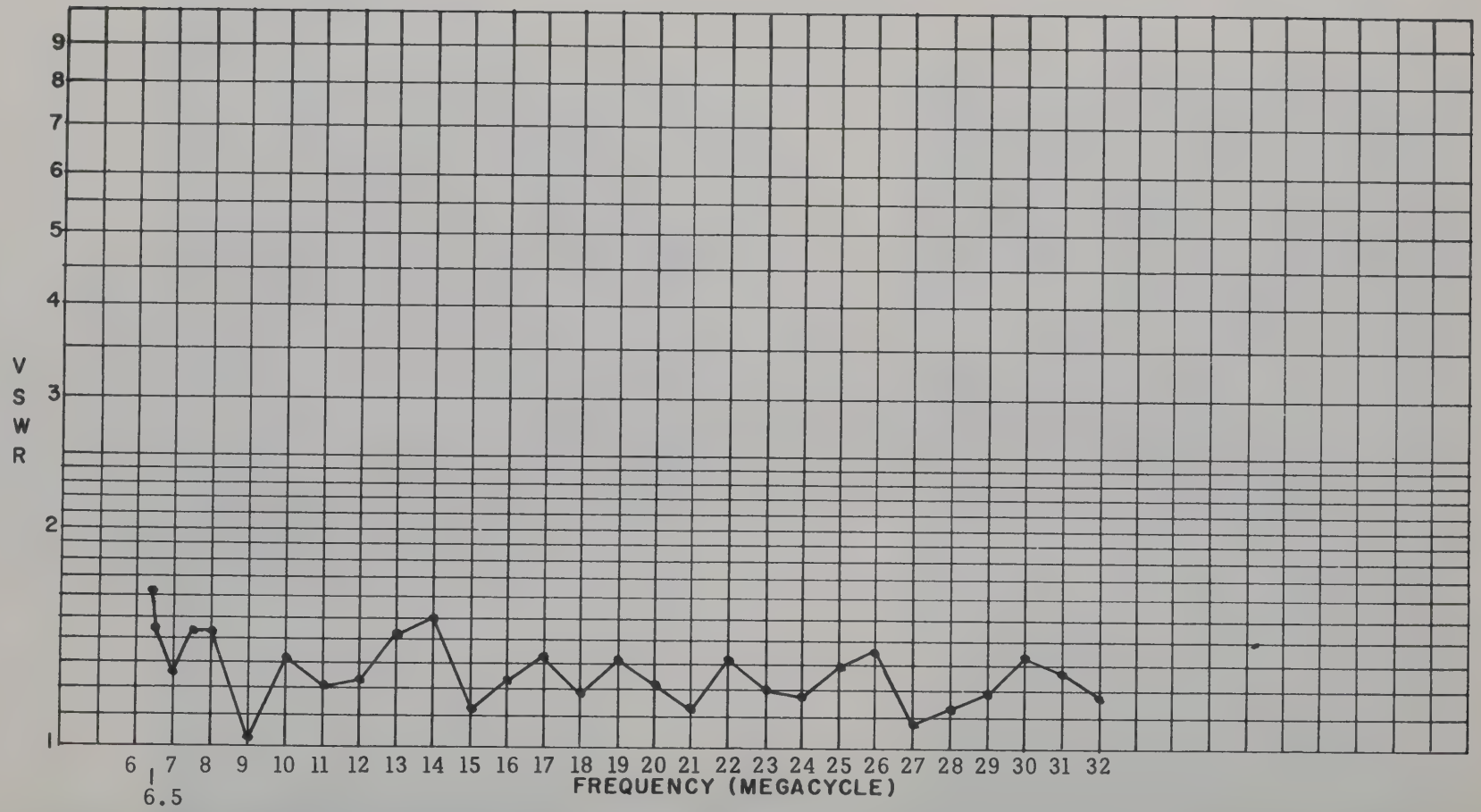
ELEVATION PLANE FIELD PATTERNS
30.0 MC/S

RELATIVE FIELD STRENGTH
ABOVE ISOTROPIC - AVERAGE
GROUND CONDITIONS



TYPICAL AZIMUTH PLANE
IN
RELATIVE FIELD STRENGTH

RADIATION PATTERNS
Figure 33C



VSWR Vs. Frequency of APC Type LPH-10 Rotatable Log Periodic Antenna System

Remarks

Engineer J. M. Buzbee

Date 3 August 1966

4.1. Preventive Maintenance

a. Preventive maintenance is the systematic care, servicing, and inspection of equipment to prevent the occurrence of trouble, to reduce downtime, and to assure that the equipment is serviceable. Preventive maintenance is the responsibility of all categories of maintenance concerned with the equipment and includes the inspection, testing, and repair or replacement of parts, subassemblies, or units that inspection or tests indicate would probably fail before the next scheduled periodic service.

b. The procedures given in paragraphs 4.1.1 through 4.4 cover routine systematic care and cleaning essential to the proper upkeep of the antenna. The preventive maintenance checks and services chart (para 4.1.1) outlines functions to be performed to maintain Army electronic equipment in a combat serviceable condition; that is, in good general (physical) condition and in good operating condition.

c. To assist in maintaining combat serviceability, the chart indicates what to check, how to check, and the normal conditions. The References column lists the illustrations, paragraphs, or manuals that contain detailed repair or replacement procedures. If the defect cannot be remedied by performing the corrective action indicated, higher category of maintenance or repair is required. Reports and records of these checks and services must be made in accordance with the requirements set forth in TM 38-750.

4.1.1. Preventive Maintenance Checks and Services

Sequence No.	Item to be inspected	Procedure	Reference
1	Publications	See that all publications are complete, serviceable, and current.	Appx A.
2	Modifications	Check DA Pam 310-4 to determine if new applicable MWO's have been published. All URGENT MWO's must be applied immediately. All NORMAL MWO's must be scheduled.	TM 38-750 and DA Pam 310-4.
3	Completeness	See that the equipment is complete.	Appx B.
4	Spare parts	Check all spare parts for general condition and method of storage. No overstockage should be evident and all shortages must be on valid requisitions.	Appx B.
5	Grounding system	Check to see that the grounding system is properly installed. Tighten any loose ground connections.	
6	Lubrication	Lubricate the equipment.....	
7	Metal surfaces	Inspect metal surfaces for rust and corrosion. Clean and paint as required.	

4.1.1.1 INSPECTION AND MAINTENANCE

Due to the simplicity of the LPH-10 antenna, all necessary maintenance can be performed in the field as either corrective or preventive maintenance.

A periodic inspection should be performed every three to six months. The following inspection points should be performed and corrected as necessary.

4.1.1.2 GUYS AND ANCHORS

Guys should be inspected for proper tensioning, broken insulators and possible mechanical or corrosion damage. Anchors should be inspected for corrosion above the ground line and any evidence of slippage. Slippage will often be indicated by loose guys and a ground line mark can often be detected on the anchor rod itself. Loose guys should be retensioned to 650 to 850 lbs.

4.2 TOWER

The tower should be inspected for tightness of hardware, evidence of corrosion, bending due to improper guy tensions or settling of the base.

4.3 ANTENNA

The antenna boom and element assemblies should be inspected for corrosion, and tightness of all connections. Particular attention should be paid to the tightness of the bolts and the hose clamps making electrical connection between the air line, dummy line and the element assemblies. The insulators, such as the fiberglass angles used as element mounts, and the fiberglass tubes in the center of the element assemblies should be inspected for accumulation of conductive debris such as soot and smoke, dirt, or salt. Any evidence of destructive corrosion should be corrected by cleaning and coating with a suitable preservative. A clear lacquer should be used on conductors or aluminum paint on structural metals.

Evidence of accumulation of conductive debris should be corrected by cleaning. If possible this debris should be removed with plain water. If this will not loosen, solvents may be used which are in themselves nonconductive. Conductive cleaners which may become an electrolyte when wet, such as soap or compounds which may contain acid or alkali, should be particularly avoided.

4.4 ROTATOR

The rotator gear box is shipped with proper amount of lubricant. Check to determine proper oil level before operation. Oil in a new unit should be drained after 240 hours of operation. The case should then be thoroughly flushed with a light flushing oil and filled with a new oil of proper grade. See Table 4.1. An oil change after every 2,500 hours of operation or every six months whichever occurs first, is sufficient for speed reducers operating under normal conditions. When operating conditions are severe, such as rapid rise and fall in temperature of the gear case, accompanied by sweating of the inside walls and resulting in a formation of sludge, or when operation is in moist or dusty atmosphere, or in the presence of chemical fumes, it may be necessary to change the oil at intervals of one to three months.

The gear box is provided with a grease fitting which should be pressure lubricated with a short fiber grease having a work penetration of 310 at 77° Fahrenheit and a ASTM drop point of 350° Fahrenheit. This bearing should be lubricated at three month intervals under normal operating conditions.

The set screws in the motor flywheel, the small sprocket and the bolt holding the large sprocket should periodically be checked for tightness.

If the rotator chain is found to be excessively slack the following procedure should be followed for tensioning. Loosen the rotator mount bolts and tighten the chain by unscrewing the tensioning bolt.

CAUTION

If the rotator mount bolts are very loose when the chain is tensioned, tightening the rotator mount bolts may cause tension in the chain.

TABLE 4.1

SUGGESTED LUBRICANTS FOR SPEED REDUCER

	Below 40° F	40° F - Up
Viscosity at 210° F, SUS Compounded with	40 to 90 (Optional)	90 to 125 3 to 40% Acidless Tallow or E.P. Base
AGMA Lubricant		#7 Compound
Cities Service Oil Co.	Pacemaker Oil #1	Trojan Compound L-2
Fiske Bros. Refining co.	Lubriplate #3	Lubriplate #8
Gulf Oil Corporation	Multi Purp. Gear Lub. #80	E.P. Lubricant #115
Shell Oil Company	Macoma Oil #33	Macoma Oil #69
Sinclair Refining Co.	Duro Oil #160	#87 Heavy Duty Oil
Keystone Lub. Co.	78-6 EP Oil	WG-1X Oil
Sun Oil Company	Sunep #70	Sunep #110
Mobil Oil Co.	Vactra Oil #2	Mobil Compound #DD
Texaco	Meropa Lub. #1	Meropa Lub. #3

APPENDIX A

REFERENCES

DA PAM 310-4	Index of Technical Manuals, Technical Bulletins, Supply Manuals (Types 7, 8, and 9), Supply Bulletins, Lubrication Orders, and Modification Work Orders.
TM 38-750	Army Equipment Record Procedures.

APPENDIX B

BASIC ISSUE ITEMS

Section I. INTRODUCTION

B-1. General

This appendix lists items for Antenna Group AN/FRA-53B, the component items comprising it, and the items which accompany it, or are required for installation, operation, or operator's maintenance.

B-2. Explanation of Columns

An explanation of the columns in section II is given below.

a. Source, Maintenance, and Recoverability Codes (Column 1).

(1) Source code, column 1a. The selection status and source for the listed item is noted here. The source code used is:

Code	Explanation
P	Applies to repair parts which are stocked in or supplied from the GSA/DSA, or Army supply system, and authorized for use at indicated maintenance categories.

Code	Explanation
A -	Applies to assemblies that are not procured or stocked as such but are made up of two or more units, each of which carry individual stock numbers and descriptions and are procured and stocked and can be assembled by units at indicated maintenance categories.

(2) Maintenance code, column 1b. The lowest category of maintenance authorized to install the listed item is noted here. The maintenance code used is as follows:

Code	Explanation
O	Organizational maintenance
F	Direct support maintenance

(3) Recoverability code, column 1c. The information in this column indicates whether unserviceable items should be returned for recovery or salvage. Recoverability codes and their explanations are as follows:

Note: When no code is indicated in the recoverability column, the part will be considered expendable.

Code	Explanation
R -	Applies to repair parts and assemblies that are economically repairable at DSU and GSU activities and are normally furnished by supply on an exchange basis.

b. Federal Stock Number, Column 2. The Federal stock number for the item is indicated in this column.

c. Description, Column 3. The Federal item name, a five-digit manufacturer's code, and a part number are included in this column.

d. Unit of Issue, Column 4. The unit used as a basis of issue (e.g. ea, pr, ft, yd, etc) is noted in this column.

e. Quantity Incorporated in Unit Pack, Column 5. Not used.

f. Quantity Incorporated in Unit, Column 6. The total quantity of the item used in the equipment is given in this column.

g. Quantity Authorized, Column 7. The total quantity of an item required to be on hand and necessary for the operation and maintenance of the equipment is given in this column.

h. Illustration, Column 8.

(1) Figure number, column 8a. The number of the illustration in which the item is shown is indicated in this column.

(2) Item or symbol number, column 8b. Not used.

B-3. Federal Supply Codes

This paragraph lists the Federal supply code with the associated manufacturer's name.

Code	Manufacturer
06032	Antenna Products Co
24455	General Electric Co
50380	Reliance Electric and Engineering Co

SECTION II. BASIC ISSUE ITEMS LIST

(1) SOURCE CD (A)	(1) MAINT. CD (B)	(1) REC. CODE (C)	(2) FEDERAL STOCK NUMBER	MODEL 1	2	3	4	5	6	(3) DESCRIPTION	(4) UNIT OF ISSUE	(5) QTY INC IN UNIT PACK	(6) QTY INC IN UNIT	(7) QTY AUTH	(8) ILLUSTRATIONS (A) FIGURE NUMBER	(8) ILLUSTRATIONS (B) ITEM OR SYMBOL NUMBER
			BASIC ISSUE ITEMS LIST													
A	F	R	5820-892-3866							ANTENNA GROUP AN/FRA-53B: Rotatable log periodic 6.5 to 32 mc/s operating frequency range; 06032; 1500-0054-001 (This item is nonexpendable.)	ea				1.1	
										TECHNICAL MANUAL TM 11-5820-501-15-2: Requisition through pinpoint account number if assigned; otherwise through nearest Adjutant General facility. NOTE: A quantity of 2 technicals are packed with each Antenna Group AN/FRA-53B. Where a valid need exists, additional copies may be requisitioned and kept on hand.	ea			2		
P	O		6145-937-1044							CABLE SPECIAL PURPOSE ELECTRICAL: 06032; 4000-0010	ea		1	1		
P	O		5995-937-0131							CABLE ASSEMBLY ELECTRICAL: 06032; 0001-5528-001	ea		1	1		
P	O		6240-223-9100							LAMP, NEON: 24455; NE51	ea		1	2	2.29	
P	O		6105-978-7457							MOTOR, ELECTRIC: 50380; P56E1338P-CR	ea		1	1		
										NO ACCESSORIES, TOOLS, OR TEST EQUIPMENT ARE TO BE ISSUED WITH THIS EQUIPMENT						

APPENDIX C

MAINTENANCE ALLOCATION

Section I. INTRODUCTION

C-1. General

This appendix provides a summary of the maintenance operations covered in the equipment literature for Antenna Group AN/FRA-53B. It authorizes categories of maintenance for specific maintenance functions on repairable items and components and the tools and equipment required to perform each function. This appendix may be used as an aid in planning maintenance operations.

C-2. Explanation of Format for Maintenance Allocation Chart

a. Group Number. Not used.

b. Component Assembly Nomenclature. This column lists the item names of component units, assemblies, subassemblies, and modules on which maintenance is authorized.

c. Maintenance Function. This column indicates the maintenance category at which performance of the specific maintenance function is authorized. Authorization to perform a function at any category also inclues authorization to perform that function at higher categories. The codes used represent the various maintenance categories as follows:

Code	Maintenance Category
C	Operator/Crew
O	Organizational Maintenance
F	Direct Support Maintenance
H	General Support Maintenance
D	Depot Maintenance

d. Tools and Equipment. The numbers appearing in this column refer to specific tools and equipment which are identified by these numbers in section III.

e. Remarks. Self explanatory

C-3. Explanation of Format for Tool and Test Equipment Requirements

The columns in the tool and test equipment requirements chart are as follows:

a. Tools and Equipment. The numbers in this column coincide with the numbers used in the tools and equipment column of the MAC. The numbers indicate the applicable tool for the maintenance function.

b. Maintenance Category. The codes in this column indicate the maintenance category normally allocated the facility.

c. Nomenclature. This column lists tools, test, and maintenance equipment required to perform the maintenance functions.

d. Federal Stock Number. This column lists the Federal stock number.

e. Tool Number. Not used.

SECTION II. MAINTENANCE ALLOCATION CHART

MAINTENANCE ALLOCATION CHART

GROUP NUMBER	COMPONENT ASSEMBLY NOMENCLATURE	MAINTENANCE FUNCTIONS											TOOLS AND EQUIPMENT	REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
	ANTENNA GROUP AN/FRA-53B	O											6	
			O										1,6	
			F										2,4,5	
				F									3,7	
									F				2,3,4,5,7	
										F			2,3,4,5,7	
			H										2,4,5	
			D										2,4,5	
											D		2,3,4,5,7	

TOOL AND TEST EQUIPMENT REQUIREMENTS

TOOLS AND EQUIPMENT	MAINTENANCE CATEGORY	NOMENCLATURE	FEDERAL STOCK NUMBER	TOOL NUMBER
		AN/FRA-53B (continued)		
1	O	MULTIMETER AN/URM-105	6625-581-2036	
2	F,H,D	MULTIMETER TS-352( )/U	6625-242-5023	
3	F,D	HAMMER TL-332/U	5120-224-4047	
4	F,H,D	TOOL KIT TK-87/U	5180-690-4552	
5	F,H,D	TOOL KIT TK-88/U	5180-893-1389	
6	O	TOOL KIT TK-115/G	5180-856-1578	
7	F,D	WRENCH SET TL-552	5180-498-7038	

APPENDIX D

ORGANIZATIONAL, DS, GS, AND DEPOT REPAIR PARTS

Section I. INTRODUCTION

D-1. General

This appendix contains a list of repair parts required for the performance of organizational maintenance and a list covering the corresponding requirements for direct support, general support, and depot maintenance for Antenna Group AN/FRA-53B.

Note: No special tools, test, and support equipment are required for the AN/FRA-53B.

D-2. Explanation of Sections

This repair parts list is divided into four principal parts:

a. Prescribed Load Allowance List (PLA) - Section II. The PLA is a consolidated listing of repair parts allocated for initial stockage at organizational maintenance. This is a mandatory minimum stockage allowance.

b. Repair Parts for Organizational Maintenance - Section III. Repair parts authorized for organizational maintenance ~~is~~ are included in this section.

c. Repair Parts for Direct Support, General Support, and Depot Maintenance - Section IV. This chart lists repair parts authorized for maintenance performance at direct support, general support, and depot categories.

d. Federal Stock Number Cross-Reference Index - Section V. This is a cross-reference index of Federal stock numbers to illustrations by figure and item number.

D-3. Explanation of Columns

An explanation of the columns in sections II through IV is given below.

a. Source, Maintenance and Recoverability Codes, Column 1, Sections III and IV.

(1) Source code, column 1a. The selection status and source for the listed item is noted here. Source codes and their explanations are as follows:

Code	Explanation
P	-- applies to repair parts that are stocked in or supplied from the GSA/DSA, or Army supply system, and authorized for use at indicated maintenance categories.

Code	Explanation

A -- applies to assemblies that are not procured or stocked as such but are made up of two or more units, each of which carry individual stock numbers and descriptions and are procured and stocked and can be assembled by units at indicated maintenance categories.

X2 -- applies to repair parts which are not stocked. The indicated maintenance category requiring such repair parts will attempt to obtain them through cannibalization; if not obtainable through cannibalization, such repair parts will be requisitioned with supporting justification through normal supply channels.

(2) Maintenance code, column 1b. The lowest category of maintenance authorized to install the listed item is noted here.

Code	Explanation
O	Organizational Maintenance
F	Direct Support Maintenance

(3) Recoverability code, column 1c. The information in this column indicates whether unserviceable items should be returned for recovery or salvage. Recoverability codes and their explanations are as follows:

Note: When no code is indicated in the recoverability column, the part will be considered expendable.

Code	Explanation
R	-- applies to repair parts and assemblies which are economically repairable at DSU and GSU activities and normally are furnished by supply on an exchange basis.

b. Federal Stock Number, Column 1, Section II; Column 2, Sections III and IV. The Federal stock number for the item is indicated in this column.

c. Description, Column 2, Section II; Column 3, Sections III and IV. The sequence number, Federal item name, a five-digit manufacturer's code, an indenture code, and a part number are included in this column. For subsequent appearances of the same item, the manufacturer's code and part number are omitted. The words "same as" followed by the sequence number assigned to the item when it first appeared in the list will follow the item name, e.g., "RESISTOR, FIXED, COMPOSITION: SAME AS A298". The indenture codes indicate the end item, the assemblies, and the component parts. Identical codes are parts of the preceding higher code. An asterisk (*) in the indenture code column indicates attaching hardware.

d. Unit of Issue, Column 4, Sections III and IV. The unit used as a basis of issue (e.g. ea, pr, ft, yd, etc) is noted in this column.

e. Quantity Incorporated in Unit Pack, Column 4, Section II; Column 5, Sections III and IV. Not used.

f. Quantity Incorporated in Unit, Column 6, Sections III and IV. The quantity of repair parts in an assembly is given in this column.

g. Maintenance Allowance, Column 3, Section II; Column 7, Sections III and IV.

(1) The allowance columns are divided into subcolumns. The total quantity of items authorized for the number of equipments supported is indicated in each subcolumn opposite the first appearance of each item. Subsequent appearances of the same item will have no entry in the allowance columns but will have a reference, in the description column, to the first appearance of the item. Items authorized for use as required but not for initial stockage are identified with an asterisk (*) in the allowance column.

(2) The quantitative allowances for organizational maintenance represents one initial prescribed load for a 15-day period for the number of equipments supported. Units and organizations authorized additional prescribed loads will multiply the number of prescribed loads authorized by the quantity of repair parts reflected in the appropriate density column to obtain the total quantity of repair parts authorized.

(3) Subsequent changes to organizational allowances will be limited as follows: No change in the range of items is authorized. If additional items are considered necessary, recommendation should be forwarded to Commanding General, U. S. Army Electronics Command, ATTN: AMSEL-MR-NMP-CM, Fort Monmouth, N. J. 07703, for exception or revision to the allowance list. Revisions to the range of items authorized will be made by the USA ECOM National Maintenance Point based upon engineering experience, demand data, or TAERS information.

(4) The quantitative allowances for DS/GS categories of maintenance will represent initial stockage for a 30-day period for the number of equipments supported.

h. One-Year Allowances Per 100 Equipments/Contingency Planning Purposes, Column 8, Sections III and IV. Opposite the first appearance of each item, the total quantity required for distribution and contingency planning purposes is indicated. The range of items indicates total quantities of all authorized items required to provide for adequate support of 100 equipments for one year.

i. Illustration, Column 8, Section III; Column 10, Section IV.

(1) Figure number, column 8a and 10a. The number of the illustration in which the item is shown is indicated in this column.

(2) Item or symbol number, column 8b and 10b. The callout number used to reference the item in the illustration is indicated in this column.

j. Depot Maintenance Allowance Per 100 Equipments, Column 9, Section IV. This column indicates the total quantity of each item authorized depot maintenance for 100 equipments. Subsequent appearances of the same item will have no entry in this column, but will have a reference in the description column to the first appearance of the item.

D-4. Location of Repair Parts

a. When the Federal stock number is unknown follow the procedures given in (1) through (4) below.

(1) Use the table of contents to locate the appropriate appendix of the repair parts list.

(2) If the item or symbol number is available, locate the item by scrutiny of columns 8b and/or 10b of the repair parts list.

(3) If the item, symbol, and figure number is not known check the description column (column 3) in the repair parts list to locate the part.

(4) Locate the applicable illustration in this manual and note the figure number and item number. Use the repair parts listing and locate the figure number and item number as noted on the illustration.

b. When the Federal stock number is known, use the repair part listing to find the repair part and the figure and item numbers as noted in the Index of Federal stock numbers.

D-5. Federal Supply Codes

This paragraph lists the Federal supply code and the associated manufacturer's name.

Code Number	Manufacturer's name
00141	PIC Design Corp
04009	Arrow-Hart and Hegeman Electric Co
04025	Preformed Line Products Co
06032	Antenna Products Co
08484	Breeze Corporation Inc
23021	Ford Instrument Co Division of Sperry Rand Corp
24455	General Electric Co
38443	Marlin-Rockwell Corp
50380	Reliance Electric and Engineering Co
52676	SKF Industries Inc
55700	Winsmith Inc
59730	Thomas and Betts Co
70472	Associated Spring Corp
71279	Cambridge Thermionic Corp
71747	Chicago Hardware and Fixture Co
71785	Cinch Mfg Co and Howard B. Jones Div
72619	Dialight Corp
73569	A. B. Chance Co

Code Number	Manufacturer's name
73680	Garlock Inc
74193	Heinemann Electric Co
78290	Struthers-Dunn Inc
79136	Waldes Kohinoor Inc
79911	Ohio Brass Co
83259	Parker Seal Co
83330	Smith, Herman H. Inc
90150	Boston Gear Works Div of Murray Co of Texas

PRESCRIBED LOAD ALLOWANCE

(1) FEDERAL STOCK NUMBER	(2) DESCRIPTION	(3) 15-DAY ORG. MAINT. ALLOWANCE (A) 1-5	(B) 6-20	(C) 21-50	(D) 51-100	(4) QTY INC IN UN PK
5995-937-0131	CABLE ASSY, ELEC: 06032; 0001-5528-001	*	*	*	2	
6240-223-9100	LAMP, NEON: 24455; NE51	2	2	3	6	

(1) SOURCE CD (A)	(1) MAINT. CD (B)	(1) REC. CODE (C)	(2) FEDERAL STOCK NUMBER	MODEL 1	2	3	4	5	6	(3) DESCRIPTION	(4) UNIT OF ISSUE	(5) QTY INC IN UN PK	(6) QTY INC IN UNIT	(7) 15 DAY ORG. MAINT. ALW. (A) 1–5	(B) 6–20	(C) 21–50	(D) 51–100	(8) ILLUSTRATIONS (A) FIGURE NUMBER	(B) ITEM OR SYMBOL NUMBER
										ANTENNA GROUP AN/FRA-53B									
A	F	R	5820-892-3866							A001 ANTENNA GROUP AN/FRA-53B: Rotatable log periodic 6.5 to 32 mc/s operating frequency range; 06032; 1500-0054-001								1.1	
P	O		6240-223-9100							A252 LAMP, NEON: 24455; NE51	ea		1	2	2	3	6	2.29	
P	O		5995-937-0131							A291 CABLE ASSY, ELEC: 06032; 0001-5528-001	ea		1	*	*	*	2		

(1) SOURCE CD (A)	(1) MAINT. CD (B)	(1) REC. CODE (C)	REPAIR PARTS FOR DIRECT SUPPORT, GENERAL SUPPORT, AND DEPOT MAINTENANCE (2) FEDERAL STOCK NUMBER	MODEL 1	2	3	4	5	6	CD IND	(3) DESCRIPTION	(4) UNIT OF ISSUE	(5) QTY INC IN UN PK	(6) QTY INC IN UNIT	(7) 30 DAY MAINT. ALW. DS (A) 1–20	DS (B) 21–50	DS (C) 51–100	GS (A) 1–20	GS (B) 21–50	GS (C) 51–100	(8) 1 YR. ALW. PER 100 EQUIP. CNTGCY	(9) DEPOT MAINT. ALW. PER 100 EQUIP.	(10) ILLUSTRATIONS (A) FIGURE NUMBER	(B) ITEM OR SYMBOL NUMBER
A	F	R	5820-892-3866								A001 ANTENNA GROUP AN/FRA-53B: Rotatable log periodic 6.5 to 32 mc/s operating frequency range; 06032; 1500-0054-001													1.1	
A	F									B	A002 ANTENNA KIT: 06032; 1000-0209-001	ea		1										
P	F		5985-937-1113							C	A003 ANT ELEM #1: 06032; 0001-5059-001	ea		1	*	*	2	*	*	2	4	1	2.23	
P	F		5985-937-1112							C	A004 ANT ELEM #2: 06032; 0001-5060-001	ea		1	*	*	2	*	*	2	4	1	2.20A	
P	F		5985-937-1111							C	A005 ANT ELEM #3: 06032; 0001-5061-001	ea		1	*	*	2	*	*	*	4	1	2.20A	
P	F		5985-937-1110							C	A006 ANT ELEM #4: 06032; 0001-5062-001	ea		1	*	*	2	*	*	2	4	1	2.20A	
P	F		5985-933-8262							C	A007 ANT ELEM #5: 06032; 0001-5063-001	ea		1	*	*	2	*	*	2	4	1	2.20A	
P	F		5985-933-8263							C	A008 ANT ELEM #6: 06032; 0001-5064-001	ea		1	*	*	2	*	*	2	4	1	2.20A	
P	F		5985-933-8264							C	A009 ANT ELEM SECT 7: 06032; 0001-5065-001	ea		1	*	*	2	*	*	2	4	1	2.20A	
X2	F									*	A010 BOLT, HEX HD: 06032; 3/8-16 X 1-3/4 SST	ea		1										
X2	F									*	A011 WASHER, SPLITLOCK: 06032; 3/8 SST	ea		1										
X2	F									*	A012 NUT, HEX FIN: 06032; 3/8-16 SST	ea		1										
X2	F									*	A013 BOLT, HEX HD: 06032; 1/4-20 X 1-1/2 SST	ea		1									2.20A	

(1) SOURCE CD (A)	(1) MAINT. CD (B)	(1) REC. CODE (C)	REPAIR PARTS FOR DIRECT SUPPORT, GENERAL SUPPORT, AND DEPOT MAINTENANCE (2) FEDERAL STOCK NUMBER	MODEL 1	2	3	4	5	6	IND CD	(3) DESCRIPTION	(4) UNIT OF ISSUE	(5) QTY INC IN UN PK	(6) QTY INC IN UNIT	(7) 30 DAY MAINT. ALW. DS (A) 1–20	DS (B) 21–50	DS (C) 51–100	GS (A) 1–20	GS (B) 21–50	GS (C) 51–100	(8) 1 YR. ALW. PER 100 EQUIP. CNTGCY	(9) DEPOT MAINT. ALW. PER 100 EQUIP.	(10) ILLUSTRATIONS (A) FIGURE NUMBER	(B) ITEM OR SYMBOL NUMBER
											AN/FRA-53B (continued)														
X2	F									*	A014 NUT, FLEXLOC THIN: 06032; 1/4-20 SST	ea		1									2.20A	
P	F		5985-933-8265							C	A015 ANT ELEM SECT 8: 06032; 0001-5066-001	ea		1	*	*	1	*	*	1	4	1	2.20A	
X2	F									*	A016 BOLT, HEX HD: SAME AS A010	ea		1										
X2	F									*	A017 WASHER, SPLITLOCK: SAME AS A011	ea		1										
X2	F									*	A018 NUT, HEX FIN: SAME AS A012	ea		1										
X2	F									*	A019 BOLT, HEX HD: SAME AS A013	ea		1										
X2	F									*	A020 NUT, FLEXLOC THIN: SAME AS A014	ea		1										
P	F		5985-933-8266							C	A021 ANT ELEM SECT 9: 06032; 0001-5067-001	ea		1	*	*	2	*	*	2	4	1	2.20A	
X2	F									*	A022 BOLT, HEX HD: SAME AS A010	ea		1										
X2	F									*	A023 WASHER, SPLITLOCK: SAME AS A011	ea		1										
X2	F									*	A024 NUT, HEX FIN: SAME AS A012	ea		1										
X2	F									*	A025 BOLT, HEX HD: SAME AS A013	ea		1										
X2	F									*	A026 NUT, FLEXLOC THIN: SAME AS A014	ea		1										
P	F		5985-933-8267							C	A027 ANT ELEM SECT 10: 06032; 0001-5068-001	ea		1	*	*	2	*	*	2	4	1	2.20A	
X2	F									*	A028 BOLT, HEX HD: SAME AS A010	ea		1										

(1) (A) SOURCE CD	(1) (B) MAINT. CD	(1) (C) REC. CODE	(2) FEDERAL STOCK NUMBER	MODEL 1	2	3	4	5	6	CD IND	(3) DESCRIPTION	(4) UNIT OF ISSUE	(5) QTY INC IN UN PK	(6) QTY INC IN UNIT	(7) 30 DAY MAINT. ALW. DS (A) 1–20	DS (B) 21–50	DS (C) 51–100	GS (A) 1–20	GS (B) 21–50	GS (C) 51–100	(8) 1 YR. ALW. PER 100 EQUIP. CNTGCY PL.	(9) DEPOT MAINT. ALW. PER 100 EQUIP.	(10) ILLUSTRATIONS (A) FIGURE NUMBER	(10) ILLUSTRATIONS (B) ITEM OR SYMBOL NUMBER
											AN/FRA-53B (continued)													
X2	F									*	A029 WASHER, SPLITLOCK: SAME AS A011	ea		1										
X2	F									*	A030 NUT, HEX FIN: SAME AS A012	ea		1										
X2	F									*	A031 BOLT HEX, HD: SAME AS A013	ea		1										
X2	F									*	A032 NUT, FLEXLOC THIN: SAME AS A014	ea		1										
X2	F									C	A033 ANT ELEM SECT II: 06032; 0001-5069-001	ea		1										
X2	F									*	A034 BOLT, HEX HD: SAME AS A010	ea		1										
X2	F									*	A035 WASHER, SPLITLOCK: SAME AS A011	ea		2										
X2	F									*	A036 NUT, HEX FIN: SAME AS A012	ea		2										
X2	F									*	A037 BOLT, HEX HD: SAME AS A013	ea		1										
X2	F									*	A038 NUT, FLEXLOC THIN: SAME AS A014	ea		2										
X2	F									*	A039 BOLT, HEX HD: 06032; 3/8-16 X 2-1/4 SST	ea		1										
X2	F									*	A040 BOLT, HEX HD: 06032; 1/4-20 X 2-1/2 SST	ea		1									2.20A	
P	F		5985-933-8268							C	A041 ANT ELEM SECT 12: 06032; 0001-5070-001	ea		1	*	*	2	*	*	2	4	1	2.20B	
X2	F									*	A042 BOLT, HEX HD: SAME AS A039	ea		2										
X2	F									*	A043 WASHER, SPLITLOCK: SAME AS A011	ea		2										

(1) SOURCE CD (A)	(1) MAINT. CD (B)	(1) REC. CODE (C)	REPAIR PARTS FOR DIRECT SUPPORT, GENERAL SUPPORT, AND DEPOT MAINTENANCE (2) FEDERAL STOCK NUMBER	MODEL 1	2	3	4	5	6	IND CD	(3) DESCRIPTION	(4) UNIT OF ISSUE	(5) QTY INC IN UN PK	(6) QTY INC IN UNIT	(7) 30 DAY MAINT. ALW. DS (A) 1–20	DS (B) 21–50	DS (C) 51–100	GS (A) 1–20	GS (B) 21–50	GS (C) 51–100	(8) 1 YR. ALW. PER 100 EQUIP. CNTGCY PL.	(9) DEPOT MAINT. ALW. PER 100 EQUIP.	(10) ILLUSTRATIONS (A) FIGURE NUMBER	(10) ILLUSTRATIONS (B) ITEM OR SYMBOL NUMBER
											AN/FRA-53B (continued)													
X2	F									*	A044 NUT, HEX FIN: SAME AS A012	ea		2										
X2	F									*	A045 BOLT, HEX HD: SAME AS A040	ea		2										
X2	F									*	A046 NUT, FLEXLOC THIN: SAME AS A014	ea		2										
P	F		5985-933-8269							*	A047 ANT ELEM SECT 13: 06032; 0001-5071-001	ea		1	*	*	2	*	*	2	4	1	2.20A	
X2	F									*	A048 BOLT, HEX HD: SAME AS A039	ea		2										
X2	F									*	A049 WASHER, SPLITLOCK: SAME AS A011	ea		2										
X2	F									*	A050 NUT, HEX FIN: SAME AS A012	ea		2										
X2	F									*	A051 BOLT, HEX HD: SAME AS A040	ea		2										
X2	F									*	A052 NUT, FLEXLOC THIN: SAME AS A014	ea		2										
P	F		5985-933-8270							C	A053 ANT ELEM SECT 14: 06032; 0001-5072-001	ea		1	*	*	2	*	*	2	4	1	2.20B	
X2	F									*	A054 BOLT, HEX HD: SAME AS A039	ea		2										
X2	F									*	A055 WASHER, SPLITLOCK: SAME AS A011	ea		2										
X2	F									*	A056 NUT, HEX FIN: SAME AS A012	ea		2										
X2	F									*	A057 BOLT, HEX HD: 06032; 1/4-20 X 2-1/4 SST	ea		2										
X2	F									*	A058 NUT, FLEXLOC THIN: SAME AS A014	ea		2										

(1) SOURCE CD (A)	(1) MAINT. CD (B)	(1) REC. CODE (C)	(2) FEDERAL STOCK NUMBER	(3) DESCRIPTION MODEL 1	2	3	4	5	6	IND CD		(4) UNIT OF ISSUE	(5) QTY INC IN UN PK	(6) QTY INC IN UNIT	(7) 30 DAY MAINT. ALW. DS (A) 1–20	DS (B) 21–50	DS (C) 51–100	GS (A) 1–20	GS (B) 21–50	GS (C) 51–100	(8) 1 YR. ALW. PER 100 EQUIP. CNTGCY	(9) DEPOT MAINT. ALW. PER 100 EQUIP.	(10) ILLUSTRATIONS (A) FIGURE NUMBER	(B) ITEM OR SYMBOL NUMBER
											AN/FRA-53B (continued)													
P	F		5985-933-8271							C	A059 ANT ELEM SECT 15: 06032; 0001-5073-001	ea		1	*	*	2	*	*	2	4	1	2.20B	
X2	F									*	A060 BOLT, HEX HD: 06032; 3/8-16 X 3 SST	ea		1										
X2	F									*	A061 NUT, HEX FIN: SAME AS A012	ea		2										
X2	F									*	A062 WASHER, SPLITLOCK: SAME AS A011	ea		2										
X2	F									*	A063 BOLT, HEX HD: SAME AS A039	ea		1										
X2	F									*	A064 BOLT, HEX HD: SAME AS A040	ea		1										
X2	F									*	A065 BOLT, HEX HD: 06032; 1/4-20 X 3-1/2 SST	ea		1									2.20B	
X2	F									*	A066 NUT, FLEXLOC THIN: SAME AS A014	ea		2										
P	F		5985-933-8272							C	A067 ANT ELEM SECT 16: 06032; 0001-5074-001	ea		1	*	*	2	*	*	2	4	1	2.20B	
X2	F									*	A068 BOLT, HEX HD: SAME AS A060	ea		2										
X2	F									*	A069 WASHER, SPLITLOCK: SAME AS A011	ea		2										
X2	F									*	A070 NUT, HEX FIN: SAME AS A012	ea		2										
X2	F									*	A071 BOLT, HEX HD: SAME AS A065	ea		1										
X2	F									*	A072 NUT, FLEXLOC THIN: SAME AS A014	ea		2										
X2	F									*	A073 ANT ELEM SECT: 06032; 0001-5089-001	ea		10									2.20B	

(1) SOURCE CD (A)	(1) MAINT. CD (B)	(1) REC. CODE (C)	REPAIR PARTS FOR DIRECT SUPPORT, GENERAL SUPPORT, AND DEPOT MAINTENANCE (2) FEDERAL STOCK NUMBER	MODEL 1	2	3	4	5	6	(3) DESCRIPTION IND CD		(4) UNIT OF ISSUE	(5) QTY INC IN UN PK	(6) QTY INC IN UNIT	(7) 30 DAY MAINT. ALW. DS (A) 1–20	DS (B) 21–50	DS (C) 51–100	GS (A) 1–20	GS (B) 21–50	GS (C) 51–100	(8) 1 YR. ALW. PER 100 EQUIP. CNTGCY PL.	(9) DEPOT MAINT. ALW. PER 100 EQUIP.	(10) ILLUSTRATIONS (A) FIGURE NUMBER	(B) ITEM OR SYMBOL NUMBER
											AN/FRA-53B (continued)													
X2	F									C	A074 ANT ELEM SECT 11: 06032; 0001-5219-001	ea		1										
X2	F									C	A075 ANT ELEM SECT: 06032; 0001-5088-001	ea		3									2.2CB	
X2	F									*	A076 BOLT, HEX HD: SAME AS A039	ea		1										
X2	F									*	A077 NUT, HEX FIN: SAME AS A012	ea		1										
X2	F									*	A078 WASHER, SPLITLOCK: SAME AS A011	ea		1										
X2	F									*	A079 BOLT, HEX HD: SAME AS A040	ea		1										
X2	F									*	A080 NUT, FLEXLOC THIN: SAME AS A014	ea		1										
X2	F									C	A081 ANT ELEM SECT: 06032; 0001-5087-001	ea		7									2.2OA	
X2	F									C	A082 ELEM HDW KIT: 06032; 0001-5032-001	ea		1										
X2	F									D	A083 FEED STRAP 1-7: 06032; 0001-4990-001	ea		14										
X2	F									D	A084 FEED STRAP 8-10: 06032; 0001-4989-001	ea		6										
X2	F									D	A085 FEED STRAP 11-13: 06032; 0001-4988-001	ea		6										
X2	F									D	A086 FEED STRAP 14: 06032; 0001-4987-001	ea		2										
X2	F									D	A087 FEED STRAP 15: 06032; 0001-4986-001	ea		2										

(1) SOURCE CD (A)	(1) MAINT. CD (B)	(1) REC. CODE (C)	(2) FEDERAL STOCK NUMBER	(3) DESCRIPTION MODEL 1	2	3	4	5	6	CD IND		(4) UNIT OF ISSUE	(5) QTY INC IN UN PK	(6) QTY INC IN UNIT	(7) 30 DAY MAINT. ALW. DS (A) 1-20	DS (B) 21-50	DS (C) 51-100	GS (A) 1-20	GS (B) 21-50	GS (C) 51-100	(8) 1 YR. ALW. PER 100 EQUIP. CNTGCY	(9) DEPOT MAINT. ALW. PER 100 EQUIP.	(10) ILLUSTRATIONS (A) FIGURE NUMBER	(B) ITEM OR SYMBOL NUMBER
											AN/FRA-53B (continued)													
X	F									D	A088 FEED STRAP 16: 06032; 0001-4985-001	ea		2										
X	F									D	A089 SADDLE 1-7: 06032; 0001-4116-001	ea		14										
X	F									D	A090 SADDLE 8-10: 06032; 0001-4070-001	ea		6										
X	F									D	A091 SADDLE 11-13: 06032; 0001-4069-001	ea		6										
X	F									D	A092 SADDLE 14: 06032; 0001-4029-001	ea		2										
X	F									D	A093 SADDLE 15: 06032; 0001-4028-001	ea		2										
X	F									D	A094 SADDLE 16: 06032; 0001-4027-001	ea		2										
X	F									D	A095 SPACER: 06032; 0001-4150-001	ea		2									2.19	
X	F									D	A096 U-BOLT 1-7: 06032; 0001-4112-001	ea		14										
X	F									D	A097 U-BOLT 8-10: 06032; 0001-4072-001	ea		6										
X	F									D	A098 U-BOLT 11-13: 06032; 0001-4071-001	ea		6										
X	F									D	A099 U-BOLT 14: 06032; 0001-4041-001	ea		2										
X	F									D	A100 U-BOLT 15: 06032; 0001-4040-001	ea		2										

(1) SOURCE CD (A)	(1) MAINT. CD (B)	(1) REC. CODE (C)	REPAIR PARTS FOR DIRECT SUPPORT, GENERAL SUPPORT, AND DEPOT MAINTENANCE (2) FEDERAL STOCK NUMBER	MODEL 1	2	3	4	5	6	CD IND	(3) DESCRIPTION	(4) UNIT OF ISSUE	(5) QTY INC IN UN PK	(6) QTY INC IN UNIT	(7) 30 DAY MAINT. ALW. DS (A) 1–20	DS (B) 21–50	DS (C) 51–100	GS (A) 1–20	GS (B) 21–50	GS (C) 51–100	(8) 1 YR. ALW. PER 100 EQUIP. CNTGCY PL.	(9) DEPOT MAINT. ALW. PER 100 EQUIP.	(10) ILLUSTRATIONS (A) FIGURE NUMBER	(10) ILLUSTRATIONS (B) ITEM OR SYMBOL NUMBER
											AN/FRA-53B (continued)													
X2	F									D	A101 U-BOLT 16: 06032; 0001-4039-001	ea		2										
X2	F									D	A102 NUT, HEX FIN: 06032; 1/4-20 SST	ea		92										
X2	F									D	A103 NUT, HEX FIN: 06032; 5/16-18 SST	ea		24									2.10	
X2	F									D	A104 NUT, HEX FIN: 06032; 7/16-14 SST	ea		12										
X2	F									D	A105 SCREW, RH: 06032; 1/4-20 X 2 SST	ea		28										
X2	F									D	A106 SCREW, RH: 06032; 1/4-20 X 2-1/2 SST	ea		12									2.20A	
X2	F									D	A107 SCREW, RH: 06032; 1/4-20 X 3 SST	ea		12										
X2	F									D	A108 SCREW, RH: 06032; 1/4-20 X 3-1/2 SST	ea		4									2.20B	
X2	F									D	A109 SCREW, RH: 06032; 1/4-20 X 4 SST	ea		4										
X2	F									D	A110 SCREW, RH: 06032; 1/4-20 X 4-1/2 SST	ea		4										
X2	F									D	A111 WASH, SPLITLOCK: 06032; 1/4 SST	ea		92										
X2	F									D	A112 WASH, FLAT: 06032; 1/4 SST	ea		28										
X2	F									D	A113 WASH, SPLITLOCK: 06032; 5/16 SST	ea		24										

(1)			REPAIR PARTS FOR DIRECT SUPPORT, GENERAL SUPPORT, AND DEPOT MAINTENANCE									(4)	(5)	(6)	(7) 30 DAY MAINT. ALW.						(8)	(9)	(10) ILLUSTRATIONS	
(A) SOURCE CD	(B) MAINT. CD	(C) REC. CODE	(2) FEDERAL STOCK NUMBER	MODEL 1	2	3	4	5	6	CD IND	(3) DESCRIPTION	UNIT OF ISSUE	QTY INC IN UN PK	QTY INC IN UNIT	DS (A) 1–20	DS (B) 21–50	DS (C) 51–100	GS (A) 1–20	GS (B) 21–50	GS (C) 51–100	1 YR. ALW. PER 100 EQUIP. CNTGCY	DEPOT MAINT. ALW. PER 100 EQUIP.	(A) FIGURE NUMBER	(B) ITEM OR SYMBOL NUMBER
											AN/FRA-53B (continued)														
X?	F									D	A114 WASH, FLAT: 06032; 5/16 SST	ea		24										
X?	F									L	A115 WASH, SPLITLOCK: 06032; 7/16 SST	ea		12										
X?	F									D	A116 WASH, FLAT REG: 06032; 7/16 SST	ea		12										
X?	F									C	A117 BOOM SECT NO 1: 06032; 0001-5101-001	ea		1									2.15	
X?	F									*	A118 BOOM SECT, RIVET: 06032; 0001-5101-001	ea		1										
P	F		5970-933-8146							*	A119 INS, SPT, 1-7: 06032; 0001-4977-001	ea		2	2	3	5	2	2	2	59	42	2.11	
X?	F									*	A120 NUT, HEX FIN: SAME AS A012	ea		4										
X?	F									*	A121 SCREW, HEX HD: 06032; 1/4-20 X 5/8 SST	ea		4										
X?	F									*	A122 WASH, SPLITLOCK: SAME AS A111	ea		4										
X?	F									*	A123 WASHER, FLAT: SAME AS A112	ea		4										
X?	F									C	A124 BOOM SECT NO 2: 06032; 0001-5113-001	ea		2									2.11	
X?	F									*	A125 BOOM SECT, RIVET: 06032; 0001-5113-003	ea		2										
P	F									*	A126 INS, SPT 1-7: SAME AS A119	ea		6										
P	F		5970-933-8150							*	A127 INS, SPT 8-10: 06032; 0001-5108-001	ea		2	2	2	3	2	2	2	33	18	2.12	

(1) SOURCE CD (A)	(1) MAINT. CD (B)	(1) REC. CODE (C)	REPAIR PARTS FOR DIRECT SUPPORT, GENERAL SUPPORT, AND DEPOT MAINTENANCE (2) FEDERAL STOCK NUMBER	MODEL 1	2	3	4	5	6	CD IND	(3) DESCRIPTION	(4) UNIT OF ISSUE	(5) QTY INC IN UN PK	(6) QTY INC IN UNIT	(7) 30 DAY MAINT. ALW. DS (A) 1–20	DS (B) 21–50	DS (C) 51–100	GS (A) 1–20	GS (B) 21–50	GS (C) 51–100	(8) 1 YR. ALW. PER 100 EQUIP. CNTGCY	(9) DEPOT MAINT. ALW. PER 100 EQUIP.	(10) ILLUSTRATIONS (A) FIGURE NUMBER	(10) ILLUSTRATIONS (B) ITEM OR SYMBOL NUMBER
											AN/FRA-53B (continued)													
X2	F									*	A128 NUT, HEX FIN: SAME AS A012	ea		16										
X2	F									*	A129 SCREW, HEX HD: 06032; 1/4-20 X 7/8 SST	ea		4									2.11	
X2	F									*	A130 SCREW, HEX HD: 06032; 1/4-20 X 3/4 SST	ea		12									2.11	
X2	F									*	A131 WASHER, SPLITLOCK: SAME AS A111	ea		16										
X2	F									*	A132 WASHER, FLAT REG: SAME AS A116	ea		16										
X2	F									C	A133 BOOM SECT NO 3A: 06032; 0001-5127-001	ea		1										
X2	F									*	A134 BOOM SECT, RIVET: 06032; 0001-5127-003	ea		1										
P	F									*	A135 INS, SPT 8-10: SAME AS A127	ea		1										
P	F		5970-933-8149							*	A136 INS, SPT 11-13: 06032; 0001-5109-001	ea		3	2	2	3	2	2	2	33	18	2.12	
X2	F									*	A137 SPAR, BOOM CTR: 06032; 0001-5095-001	ea		2										
X2	F									*	A138 SUPPORT, ANT: 06032; 0001-5100-001	ea		1										
X2	F									*	A139 NUT, HEX FIN: SAME AS A103	ea		2										
X2	F									*	A140 NUT, HEX FIN: SAME AS A102	ea		4										
X2	F									*	A141 SCREW, HEX HD: SAME AS A129	ea		4										

(1) SOURCE CD (A)	(1) MAINT. CD (B)	(1) REC. CODE (C)	REPAIR PARTS FOR DIRECT SUPPORT, GENERAL SUPPORT, AND DEPOT MAINTENANCE (2) FEDERAL STOCK NUMBER	MODEL 1	2	3	4	5	6	IND CD	(3) DESCRIPTION	(4) UNIT OF ISSUE	(5) QTY INC IN UN PK	(6) QTY INC IN UNIT	(7) 30 DAY MAINT. ALW. DS (A) 1–20	DS (B) 21–50	DS (C) 51–100	GS (A) 1–20	GS (B) 21–50	GS (C) 51–100	(8) 1 YR. ALW. PER 100 EQUIP. CNTGCY PL.	(9) DEPOT MAINT. ALW. PER 100 EQUIP.	(10) ILLUSTRATIONS (A) FIGURE NUMBER	(10) ILLUSTRATIONS (B) ITEM OR SYMBOL NUMBER
											AN/FRA-53B (continued)													
X2	F									*	A142 SCREW, HEX HD: 06032; 5/16-18 X 1 SST	ea		1									2.11	
X2	F									*	A143 SCREW, HEX HD: 06032; 5/16-18 X 1-1/2 SST	ea		1									2.10	
X2	F									*	A144 SCREW, HEX HD: 06032; 1/4-20 X 1-1/4 SST	ea		2										
X2	F		5970-933-8149							*	A145 SCREW, HEX HD: 06032; 1/4-20 X 1 SST	ea		8									2.12	
X2	F									*	A146 WASHER, SPLITLOCK: SAME AS A111	ea		14										
X2	F									*	A147 WASHER, FLAT REG: SAME AS A116	ea		8										
X2	F									*	A148 WASHER, SPLITLOCK: SAME AS A113	ea		2										
X2	F									C	A149 BOOM SECT 3B: 06032; 0001-5129-001	ea		1									2.12	
X2	F									*	A150 BOOM SECT, RIVET: 06032; 0001-5129-003	ea		1										
P	F									*	A151 INS, SPT 8-10: SAME AS A127	ea		1										
P	F									*	A152 INS, SPT 11-13: SAME AS A136	ea		3										
X2	F									*	A153 SPAR, BOOM CTR: 06032; 0001-5093-001	ea		2										
X2	F									*	A154 SUPPORT, ANT: 06032; 0001-5099-001	ea		1										

(1) SOURCE CD (A)	(1) MAINT. CD (B)	(1) REC. CODE (C)	(2) FEDERAL STOCK NUMBER	MODEL 1	2	3	4	5	6	IND CD	(3) DESCRIPTION	UNIT OF ISSUE (4)	QTY INC IN UN PK (5)	QTY INC IN UNIT (6)	30 DAY MAINT. ALW. (7) DS (A) 1–20	DS (B) 21–50	DS (C) 51–100	GS (A) 1–20	GS (B) 21–50	GS (C) 51–100	1 YR. ALW. PER 100 EQUIP. CNTGCY PL. (8)	DEPOT MAINT. ALW. PER 100 EQUIP. (9)	ILLUSTRATIONS (10) (A) FIGURE NUMBER	ILLUSTRATIONS (10) (B) ITEM OR SYMBOL NUMBER
											AN/FRA-53B (continued)													
X2	F									*	A155 NUT, HEX FIN: SAME AS A102	ea		14										
X2	F									*	A156 NUT, HEX FIN: SAME AS A103	ea		4										
X2	F									*	A157 SCREW HEX HD: SAME AS A129	ea		4										
X2	F									*	A158 SCREW HEX HD: SAME AS A145	ea		8										
X2	F									*	A159 SCREW HEX HD: SAME AS A144	ea		2										
X2	F									*	A160 SCREW HEX HD: 06032; 5/16-18 X 1-1/4 SST	ea		2									2.16	
X2	F									*	A161 WASHER, SPLITLOCK: SAME AS A111	ea		14										
X2	F									*	A162 WASHER, FLAT REG: SAME AS A116	ea		8										
X2	F									*	A163 WASHER, SPLITLOCK: SAME AS A113	ea		4										
X2	F									C	A164 BOOM SECT NO 4: 06032; 0001-5123-001	ea		2									2.15	
X2	F									*	A165 BOOM SECT, RIVET: 06032; 0001-5123-003	ea		2										
P	F		5970-933-8145							*	A166 INS, SPT 14: 06032; 0001-5110-001	ea		2	*	2	2	*	*	2	13	6	2.15	
P	F		5970-933-8144							*	A167 INS, SPT 15: 06032; 0001-5111-001	ea		2	*	2	2	*	*	2	13	6	2.15	
P	F		5970-933-8147							*	A168 INS, SPT 16: 06032; 0001-5112-001	ea		2	*	2	2	*	*	2	13	6	2.15	
X2	F									*	A169 NUT, HEX FIN: SAME AS A102	ea		12										

(1) SOURCE CD (A)	(1) MAINT. CD (B)	(1) REC. CODE (C)	REPAIR PARTS FOR DIRECT SUPPORT, GENERAL SUPPORT, AND DEPOT MAINTENANCE (2) FEDERAL STOCK NUMBER	MODEL 1	2	3	4	5	6	CD IND	(3) DESCRIPTION	(4) UNIT OF ISSUE	(5) QTY INC IN UN PK	(6) QTY INC IN UNIT	(7) 30 DAY MAINT. ALW. DS (A) 1–20	DS (B) 21–50	DS (C) 51–100	GS (A) 1–20	GS (B) 21–50	GS (C) 51–100	(8) 1 YR. ALW. PER 100 EQUIP. CNTGCY PL.	(9) DEPOT MAINT. ALW. PER 100 EQUIP.	(10) ILLUSTRATIONS (A) FIGURE NUMBER	(10) ILLUSTRATIONS (B) ITEM OR SYMBOL NUMBER
											AN/FRA-53B (continued)													
X2	F									*	A170 SCREW HEX HD: SAME AS A158	ea		12										
X2	F									*	A171 WASHER, SPLITLOCK: SAME AS A111	ea		12										
X2	F									*	A172 WASHER, FLAT REG: SAME AS A116	ea		12										
X2	F									C	A173 BOOM HDW KIT: 06032; 0001-5169-001	ea		1										
X2	F									D	A174 BOLT, HEX HD: 06032; 5/16- 8 X 7/8 SST	ea		6									2.13	
X2	F									D	A175 BOLT, HEX HD: 06032; 5/16-18 X 1 SST	ea		30									2.26	
X2	F									D	A176 BOLT, HEX HD: 06032; 5/16-18 X 1-1/4 SST	ea		65									2.13	
X2	F									D	A177 BOLT, HEX HD: 06032; 3/8-16 X 7/8 SST	ea		8									2.15	
X2	F									D	A178 BOLT, HEX HD: 06032; 3/8-16 X 1 SST	ea		32									2.16	
X2	F									D	A179 BOLT, HEX HD: 06032; 3/8-16 X 1-1/4 SST	ea		32										
X2	F									D	A180 NUT, HEX FIN: SAME AS A103	ea		101										
X2	F									D	A181 NUT, HEX FIN: SAME AS A012	ea		72										
X2	F									D	A182 WASHER, SPLITLOCK: SAME AS A113	ea		101										
X2	F									D	A183 WASHER, SPLITLOCK: SAME AS A011	ea		72										

(1) SOURCE CD (A)	(1) MAINT. CD (B)	(1) REC. CODE (C)	REPAIR PARTS FOR DIRECT SUPPORT, GENERAL SUPPORT, AND DEPOT MAINTENANCE (2) FEDERAL STOCK NUMBER	MODEL 1	2	3	4	5	6	CD IND	(3) DESCRIPTION	(4) UNIT OF ISSUE	(5) QTY INC IN UN PK	(6) QTY INC IN UNIT	(7) 30 DAY MAINT. ALW. DS (A) 1–20	DS (B) 21–50	DS (C) 51–100	GS (A) 1–20	GS (B) 21–50	GS (C) 51–100	(8) 1 YR. ALW. PER 100 EQUIP. CNTGCY	(9) DEPOT MAINT. ALW. PER 100 EQUIP.	(10) ILLUSTRATIONS (A) FIGURE NUMBER	(10) ILLUSTRATIONS (B) ITEM OR SYMBOL NUMBER
											AN/FRA-53B (continued)													
P	F		4730-359-9487							C	A184 CLAMP, HOSE: 08484; QS200M72S	ea		3	*	2	2	*	*	2	19	12	2.9	
P	F		4730-802-6842							C	A185 CLAMP, HOSE: 08484; QS200M48S	ea		32	2	4	8	3	3	3	89	72	2.19	
P	F		5950-909-3864							C	A186 COIL, RADIOFREQ: 06032; 0001-4283-001	ea		1	*	*	2	*	*	2	8	3	2.22	
X2	F									C	A187 SPACER: 06032; 0001-5372-001	ea		1										
X2	F									C	A188 SPAR, CENTER: 06032; 0001-5335-001	ea		4									2.13	
X2	F									C	A189 SPAR, HORIZ: 06032; 0001-5096-001	ea		2									2.13	
P	F		5985-937-3982							C	A190 SPAR, HORIZ: 06032; 0001-5090-001	ea		88	2	5	10	4	3	3	118	88	2.11	
P	F		5985-937-3983							C	A191 SPAR, HORIZ: 06032; 0001-5120-001	ea		2	*	2	2	*	*	2	13	6	2.14	
X2	F									C	A192 XMSN SECT, 20': 06032; 0001-4957-001	ea		1									2.21	
X2	F									C	A193 XMSN SECT, 1: 06032; 0001-5047-001	ea		1									2.21	
X2	F									C	A194 XMSN SECT, 2: 06032; 0001-5051-001	ea		1									2.21	
X2	F									C	A195 XMSN SECT, 3: 06032; 0001-5052-001	ea		1									2.21	
X2	F									C	A196 XMSN SECT, BENT: 06032; 0001-5028-001	ea		1									2.18	

(1) SOURCE CD (A)	(1) MAINT. CD (B)	(1) REC. CODE (C)	REPAIR PARTS FOR DIRECT SUPPORT, GENERAL SUPPORT, AND DEPOT MAINTENANCE (2) FEDERAL STOCK NUMBER	(3) DESCRIPTION MODEL 1	2	3	4	5	6	IND CD		(4) UNIT OF ISSUE	(5) QTY INC IN UN PK	(6) QTY INC IN UNIT	(7) 30 DAY MAINT. ALW. DS (A) 1–20	DS (B) 21–50	DS (C) 51–100	GS (A) 1–20	GS (B) 21–50	GS (C) 51–100	(8) 1 YR. ALW. PER 100 EQUIP. CNTGCY	(9) DEPOT MAINT ALW. PER 100 EQUIP.	(10) ILLUSTRATIONS (A) FIGURE NUMBER	(B) ITEM OR SYMBOL NUMBER
											AN/FRA-53B (continued)													
X2	F									C	A197 XMSN SECT, DUMMY: 06032; 0001-4969-001	ea		1									2.21	
X2	F									C	A198 XMSN SECT, DUMMY: 06032; 0001-4961-001	ea		3									2.21	
X2	F									C	A199 XMSN SECT, DUMMY: 06032; 0001-4965-001	ea		1									2.21	
X2	F									C	A200 XMSN HDW KIT: 06032; 0001-5103-001	ea		1										
P	F		5985-982-0355							D	A201 CONN, XMSN SECT: 06032; 0001-4959-001	ea		3	2	2	3	2	2	2	33	21	2.9	
X2	F									*	A202 CONNECTOR: 06032; 0001-4956-001	ea		1										
X2	F									*	A203 INSULATOR: 06032; 0001-4958-001	ea		1										
X2	F									*	A204 RETAINING RING: 79136; 5000-87	ea		6										
X2	F									D	A205 CONN, XMSN SECT: 06032; 0001-5053-001	ea		1										
X2	F									*	A206 CONNECTOR - 1: 06032; 0001-5040-001	ea		1										
X2	F									*	A207 INSULATOR - 1: 06032; 0001-5048-001	ea		1										
X2	F									D	A208 CONN, XMSN SECT: 06032; 0001-5054-001	ea		1										
X2	F									*	A209 CONNECTOR - 2: 06032; 0001-5042-001	ea		1										

(1) SOURCE CD (A)	(1) MAINT. CD (B)	(1) REC. CODE (C)	REPAIR PARTS FOR DIRECT SUPPORT, GENERAL SUPPORT, AND DEPOT MAINTENANCE (2) FEDERAL STOCK NUMBER	MODEL 1	2	3	4	5	6	(3) DESCRIPTION IND CD		(4) UNIT OF ISSUE	(5) QTY INC IN UN PK	(6) QTY INC IN UNIT	(7) 30 DAY MAINT. ALW. DS (A) 1–20	DS (B) 21–50	DS (C) 51–100	GS (A) 1–20	GS (B) 21–50	GS (C) 51–100	(8) 1 YR. ALW. PER 100 EQUIP. CNTGCY PL.	(9) DEPOT MAINT. ALW. PER 100 EQUIP.	(10) ILLUSTRATIONS (A) FIGURE NUMBER	(10) ILLUSTRATIONS (B) ITEM OR SYMBOL NUMBER
											AN/FRA-53B (continued)													
X2	F									*	A210 INSULATOR - 2: SAME AS A203	ea		1									
X2	F									D	A211 CONN, XMSN SECT: 06032; 0001-5055-001	ea		1									
X2	F									*	A212 CONNECTOR - 3: 06032; 0001-5045-001	ea		1									
X2	F									*	A213 INSULATOR - 3: SAME AS A203	ea		1									
X2	F									D	A214 PACKING PREFORM: 83259; 2-339	ea		6									
X2	F									D	A215 BOLT, HEX HD: 06032; 5/16-18 X 1-1/2 SST	ea		54								2.10	
X2	F									D	A216 BOLT, HEX HD: 06032; 1/2-20 X 3/4 SST	ea		1									
X2	F									D	A217 NUT, HEX FIN: SAME AS A103	ea		54									
X2	F									D	A218 NUT, HEX FIN: 06032; 1/2-13 SI BRZ	ea		1									
X2	F									D	A219 WASHER, SPLITLOCK: SAME AS A113	ea		54									
X2	F									D	A220 WASH, SPLITLOCK: 06032; 1/2 SST	ea		1									
X2	F									D	A221 WASH, SPLITLOCK: 06032; 1/2 SIL BRZ	ea		1									
X2	F									C	A222 XMSN SECT, U: 06032; 0001-5015-001	ea		1								2.21	

(1) SOURCE CD (A)	(1) MAINT. CD (B)	(1) REC. CODE (C)	(2) FEDERAL STOCK NUMBER	MODEL 1	2	3	4	5	6	CD IND	(3) DESCRIPTION	(4) UNIT OF ISSUE	(5) QTY INC IN UN PK	(6) QTY INC IN UNIT	(7) 30 DAY MAINT. ALW. DS (A) 1–20	DS (B) 21–50	DS (C) 51–100	GS (A) 1–20	GS (B) 21–50	GS (C) 51–100	(8) ALW. PER 100 EQUIP. 1 YR. CNTGCY PL.	(9) DEPOT MAINT. ALW. PER 100 EQUIP.	(10) ILLUSTRATIONS (A) FIGURE NUMBER	(10) ILLUSTRATIONS (B) ITEM OR SYMBOL NUMBER
											AN/FRA-53B (continued)													
X2	F									C	A223 WIND SAIL ASSY: 06032; 0001-5282-001	ea		1									2.26	
X2	F									D	A224 SPAR: 06032; 0001-4190-001	ea		2										
X2	F									D	A225 WIND SAIL: 06032; 0001-5282-003	ea		1										
X2	F									D	A226 NUT, HEX: 06032; 5/16-18 SST	ea		2										
X2	F									D	A227 SCREW, HEX HD: 06032; 5/16-18 X 7/8 SST	ea		2									2.13	
X2	F									D	A228 WASHER, SPLITLOCK: SAME AS A113	ea		2										
X2	F									C	A229 BOLT, HEX HD: 06032; 3/8-16 X 1-1/2 Galv	ea		12									2.20A	
X2	F									C	A230 NUT, HEX FIN: 06032; 3/8-16 Galv	ea		12									2.20A	
X2	F									C	A231 WASH, SPLITLOCK: 06032; 3/8 Galv	ea		12									2.20A	
P	F		6145-937-1044							B	A232 CABLE, ELECT: 06032; 4000-0010	ea		1	*	*	2	*	*	2	8	3		
X2	F									B	A233 CONTROL, ANTENNA: 06032; 1000-0215-001	ea		1										
X2	F									C	A234 CABLE CLAMP: 59730; 3303	ea		1										
X2	F									C	A235 COVER, CONTROL: 06032; 0001-5249-001	ea		1										
X2	F									C	A236 COVER, END: 06032; 0001-5248-001	ea		2										

(1) SOURCE CD (A)	(1) MAINT. CD (B)	(1) REC. CODE (C)	REPAIR PARTS FOR DIRECT SUPPORT, GENERAL SUPPORT, AND DEPOT MAINTENANCE (2) FEDERAL STOCK NUMBER	MODEL 1	2	3	4	5	6	IND CD	(3) DESCRIPTION	(4) UNIT OF ISSUE	(5) QTY INC IN UN PK	(6) QTY INC IN UNIT	(7) 30 DAY MAINT. ALW. DS (A) 1–20	DS (B) 21–50	DS (C) 51–100	GS (A) 1–20	GS (B) 21–50	GS (C) 51–100	(8) 1 YR. ALW. PER 100 EQUIP. CNTGCY	(9) DEPOT MAINT. ALW. PER 100 EQUIP.	(10) ILLUSTRATIONS (A) FIGURE NUMBER	(B) ITEM OR SYMBOL NUMBER
											AN/FRA-53B (continued)														
X2	F									C	A237 HANDLE, PANEL: 71279; 2111-A	ea		2										
X2	F									C	A238 HARNESS, SYNCHRO: 06032; 0001-5536-001	ea		1										
X2	F									C	A239 HARNESS, LAMP: 06032; 0001-5537-001	ea		1										
X2	F									C	A240 JUMPER, WIRE: 06032; 0001-5538-001	ea		3										
X2	F									C	A241 JUMPER, WIRE: 06032; 0001-5338-003	ea		1										
X2	F									C	A242 INDICATOR, AZ: 06032; 0001-5355-001	ea		1									2.29	
X2	F									*	A243 CLAMP: 06032; 0001-5354-001	ea		3										
X2	F									*	A244 HOUSING, DIAL: 06032; 0001-5251-001	ea		1									2.29	
X2	F									*	A245 INDICATOR, DIAL: 06032; 6100-0005	ea		1										
X2	F									*	A246 MOUNT, SYNCHRO: 06032; 0001-5252-001	ea		1										
X2	F									*	A247 POINTER, DIAL: 06032; 0001-5466-001	ea		1										
X2	F									*	A248 RING, RETAINING: 06032; 0001-5276-001	ea		1										
P	F		5990-978-7456							*	A249 SYNCHRO, RCVR: 23021; IF	ea		1	*	*	2	*	*	2	8	3	2.29	1B1

(1) SOURCE CD (A)	(1) MAINT. CD (B)	(1) REC. CODE (C)	(2) FEDERAL STOCK NUMBER	MODEL 1	2	3	4	5	6	IND CD	(3) DESCRIPTION	UNIT OF ISSUE (4)	QTY INC IN UN PK (5)	QTY INC IN UNIT (6)	30 DAY MAINT. ALW. DS (A) 1–20	DS (B) 21–50	DS (C) 51–100	GS (A) 1–20	GS (B) 21–50	GS (C) 51–100	(8) 1 YR. ALW. PER 100 EQUIP. CNTGCY PL.	(9) DEPOT MAINT. ALW. PER 100 EQUIP.	(10) ILLUSTRATIONS (A) FIGURE NUMBER	(10) ILLUSTRATIONS (B) ITEM OR SYMBOL NUMBER
											AN/FRA-53B (continued)													
X2	F									*	A250 WINDOW, DIAL: 06032; 0001-5277-001	ea		1										
P	F		6250-933-7745							C	A251 LAMP HOLDER: 72619; 95408X-931	ea		1	*	2	2	*	*	2	12	5	2.29	
P	O		6240-223-9100							C	A252 LAMP, NEON: 24455; NE51	ea		1	2	6	11	4	3	3	130	100	2.29	
X2	F									C	A253 MARKER STRIP: 71785; MS9-140	ea		1									2.29	
A	F									C	A254 PANEL, POWER: 06032; 0001-5253-001	ea		1										
P	F		5930-548-7855							C	A255 SWITCH, TOGGLE: 04009; 80638 D	ea		1	*	*	2	*	*	2	8	3	2.29	
X2	F									C	A256 TERMINAL BOARD: 71785; 9-140	ea		1									2.28	
X2	F									C	A257 NUT, HEX FIN: 06032; 4-40 SST	ea		12										
X2	F									C	A258 NUT, HEX FIN: 06032; 6-32 SST	ea		5										
X2	F									C	A259 SCREW, RH SLOT: 06032; 4-40 X 1/4 SST	ea		3									2.30	
X2	F									C	A260 SCREW, FH SLOT: 06032; 4-40 X 3/8 SST	ea		12										
X2	F									C	A261 SCREW, PAN HD: 06032; 6-32 X 5/8 SST	ea		2										
X2	F									C	A262 SCREW, PAN HD: 06032; 6-32 X 3/4 SST	ea		3										

(1) SOURCE CD (A)	(1) MAINT. CD (B)	(1) REC. CODE (C)	REPAIR PARTS FOR DIRECT SUPPORT, GENERAL SUPPORT, AND DEPOT MAINTENANCE (2) FEDERAL STOCK NUMBER	MODEL 1	2	3	4	5	6	CD IND	(3) DESCRIPTION	(4) UNIT OF ISSUE	(5) QTY INC IN UN PK	(6) QTY INC IN UNIT	(7) 30 DAY MAINT. ALW. DS (A) 1–20	DS (B) 21–50	DS (C) 51–100	GS (A) 1–20	GS (B) 21–50	GS (C) 51–100	(8) 1 YR. ALW. PER 100 EQUIP. CNTGCY	(9) DEPOT MAINT. ALW. PER 100 EQUIP.	(10) ILLUSTRATIONS (A) FIGURE NUMBER	(B) ITEM OR SYMBOL NUMBER
											AN/FRA-53B (continued)													
X2	F									C	A263 SCREW, PAN HD: 06032; No. 6 X 1/2 SST; Type A	ea		6										
X2	F									C	A264 SCREW, PAN HD: 06032; 10-32 X 1/2 SST	ea		4										
X2	F									C	A265 SCREW, PAN HD: 06032; 8-32 X 1/2 SST	ea		3										
X2	F									C	A266 WASH, SPLITLOCK: 06032; No. 4 SST	ea		3										
X2	F									C	A267 WASH, FLAT: 06032; No. 4 SST	ea		12										
X2	F									C	A268 WASH, SPLITLOCK: 06032; No. 6 SST	ea		5										
X2	F									C	A269 WASH, FLAT: 06032; No. 6 SST	ea		5										
X2	F									C	A270 WASH, SPLITLOCK: 06032; No. 8 SST	ea		3										
X2	F									C	A271 WASH, FLAT: 06032; No. 8 SST	ea		3										
X2	F									C	A272 WASH, SPLITLOCK: 06032; No. 10 SST	ea		4										
X2	F									B	A273 DRIVE KIT, ANT: 06032; 1000-0221-001	ea		1										
X2	F									C	A274 DRIVE ASSY, ANT: 06032; 1000-0218-001	ea		1										
X2	F									D	A275 CHAIN, ROLLER: 90150; #80 X 77 Links	ea		1										

(1) SOURCE CD (A)	(1) MAINT. CD (B)	(1) REC. CODE (C)	REPAIR PARTS FOR DIRECT SUPPORT, GENERAL SUPPORT, AND DEPOT MAINTENANCE (2) FEDERAL STOCK NUMBER	MODEL 1	2	3	4	5	6	CD IND	(3) DESCRIPTION	(4) UNIT OF ISSUE	(5) QTY INC IN UN PK	(6) QTY INC IN UNIT	(7) 30 DAY MAINT. ALW. DS (A) 1–20	DS (B) 21–50	DS (C) 51–100	GS (A) 1–20	GS (B) 21–50	GS (C) 51–100	(8) 1 YR. ALW. PER 100 EQUIP. CNTGCY	(9) DEPOT MAINT. ALW. PER 100 EQUIP.	(10) ILLUSTRATIONS (A) FIGURE NUMBER	(10) ILLUSTRATIONS (B) ITEM OR SYMBOL NUMBER
											AN/FRA-53B (continued)													
P	F		3020-929-3606							D	A276 CHAIN LINK: 90150; #80 Connecting	ea		1	*	*	2	*	*	2	8	3		
P	F		3020-929-3605							D	A277 CHAIN LINK: 90150; #80 Offset	ea		1	*	*	2	*	*	2	8	3		
P	F									D	A278 CLAMP, HOSE: SAME AS A184	ea		1										
X2	F									D	A279 CONNECTOR: 71785; 2545	ea		2										
P	F		3020-929-3604							D	A280 GEAR, SPUR: 06032; 0001-5321-001	ea		1	*	*	2	*	*	2	8	3	2.30	
P	F		3020-929-3603							D	A281 GEAR, SPUR: 06032; 0001-5374-001	ea		1	*	*	2	*	*	2	8	3	2.30	
X2	F									D	A282 GEAR ASSY: 55700; 8MCVD-RU-LU	ea		1										
X2	F									D	A283 HSG, ANT DRIVE: 06032; 0001-5315-001	ea		1										
X2	F									D	A284 HSG, ANT DRIVE: 06032; 0001-5316-001	ea		1										
X2	F									D	A285 HUB, GEAR: 06032; 0001-5317-001	ea		1										
P	F									D	A286 MOTOR, MODIFIED: 06032; 0001-5376-001	ea		1										
P	F		6105-978-7457							*	A287 MOTOR, ELECTRIC: 50380; P56E1338P-CR	ea		1	*	*	2	*	*	2	8	3		
X2	F									*	A288 FLYWHEEL ASSY: 06032; 0001-5375-001	ea		1										

(1) SOURCE CD (A)	(1) MAINT. CD (B)	(1) REC. CODE (C)	(2) FEDERAL STOCK NUMBER	MODEL 1	2	3	4	5	6	CD IND	(3) DESCRIPTION	(4) UNIT OF ISSUE	(5) QTY INC IN UN PK	(6) QTY INC IN UNIT	(7) 30 DAY MAINT. ALW. DS (A) 1–20	DS (B) 21–50	DS (C) 51–100	GS (A) 1–20	GS (B) 21–50	GS (C) 51–100	(8) 1 YR. ALW. PER 100 EQUIP. CNTGCY PL.	(9) DEPOT MAINT. ALW. PER 100 EQUIP.	(10) ILLUSTRATIONS (A) FIGURE NUMBER	(10) ILLUSTRATIONS (B) ITEM OR SYMBOL NUMBER
											AN/FRA-53B (continued)													
X2	F									*	A289 SCREW, SET SOC HD: 06032; 3/8-24 X 1/2 Flat Point	ea		1									
A	F									D	A290 PANEL ASSY, REL: 06032; 0001-5527-001	ea		1									
P	O		5995-937-0131							*	A291 CABLE ASSY, ELEC: 06032; 0001-5528-001	ea		1	*	*	2	*	*	2	8	3		
P	F		5925-937-3796							*	A292 CIRCUIT BREAKER: 74193; 3X0415	ea		1	*	*	2	*	*	2	8	3	2.28	
X2	F									*	A293 CLAMP, CABLE: 83330; 773	ea		1										
X2	F									*	A294 CLAMP, CABLE: 83330; 775	ea		1										
X2	F									*	A295 CLAMP, CABLE: 83330; 777	ea		2										
X2	F									*	A296 CLAMP, CABLE: 06032; 0001-5513-001	ea		1										
X2	F									*	A297 HARNESS, CKT BKR: 06032; 0001-5529-001	ea		1										
X2	F									*	A298 HARNESS, RELAY: 06032; 0001-5530-001	ea		1										
X2	F									*	A299 HARNESS, SYNCHRO: 06032; 0001-5532-001	ea		1										
X2	F									*	A300 JUMPER WIRE: 06032; 0001-5531-001	ea		1										
X2	F									*	A301 JUMPER WIRE: 06032; 0001-5531-003	ea		3										
X2	F									*	A302 JUMPER WIRE: 06032; 0001-5531-005	ea		5										

(1) SOURCE CD (A)	(1) MAINT. CD (B)	(1) REC. CODE (C)	(2) FEDERAL STOCK NUMBER	(3) DESCRIPTION MODEL 1	2	3	4	5	6	IND CD		(4) UNIT OF ISSUE	(5) QTY INC IN UN PK	(6) QTY INC IN UNIT	(7) 30 DAY MAINT. ALW. DS (A) 1–20	DS (B) 21–50	DS (C) 51–100	GS (A) 1–20	GS (B) 21–50	GS (C) 51–100	(8) 1 YR. ALW. PER 100 EQUIP. CNTGCY PL.	(9) DEPOT MAINT. ALW. PER 100 EQUIP.	(10) ILLUSTRATIONS (A) FIGURE NUMBER	(10) ILLUSTRATIONS (B) ITEM OR SYMBOL NUMBER
				AN/FRA-53B (continued)																				
X2	F									*	A303	JUMPER WIRE: 06032; 0001-5531-007	ea		1									
X2	F									*	A304	MARKER, STRIP: SAME AS A253	ea		1									
X2	F									*	A305	BRACKET, PANEL: 06032; 0001-4284-001	ea		1									
X2	F									*	A306	BRACKET, PANEL: 06032; 0001-4284-002	ea		1									
A	F									*	A307	PANEL, RELAY: 06032; 0001-5517-001	ea		1									
P	F		5945-909-4218							*	A308	RELAY: 78290; A175KXX79	ea		1	*	*	2	*	*	2	8	3	2.28	
X2	F									*	A309	TERMINAL BOARD: SAME AS A256	ea		1									
X2	F									*	A310	TERMINAL BOARD: 71785; 2-141	ea		1									
X2	F									*	A311	NUT, HEX FIN: SAME AS A258	ea		10									
X2	F									*	A312	NUT, HEX FIN: 06032; 8-32 SST	ea		2									
X2	F									*	A313	NUT, HEX FIN: 06032; 10-32 SST	ea		6									
X2	F									*	A314	SCREW, RH SLOT: 06032; 6-32 X 3/8 SST	ea		5									
X2	F									*	A315	SCREW, PAN HD: SAME AS A261	ea		5									
X2	F									*	A316	SCREW, RH SLOT: 06032; 8-32 X 5/8 SST	ea		2									

(1) SOURCE CD (A)	(1) MAINT. CD (B)	(1) REC. CODE (C)	REPAIR PARTS FOR DIRECT SUPPORT, GENERAL SUPPORT, AND DEPOT MAINTENANCE (2) FEDERAL STOCK NUMBER	MODEL 1	2	3	4	5	6	CD IND	(3) DESCRIPTION	(4) UNIT OF ISSUE	(5) QTY INC IN UN PK	(6) QTY INC IN UNIT	(7) 30 DAY MAINT. ALW. DS (A) 1–20	DS (B) 21–50	DS (C) 51–100	GS (A) 1–20	GS (B) 21–50	GS (C) 51–100	(8) 1 YR. ALW. PER 100 EQUIP. CNTGCY	(9) DEPOT MAINT. ALW. PER 100 EQUIP.	(10) ILLUSTRATIONS (A) FIGURE NUMBER	(B) ITEM OR SYMBOL NUMBER
											AN/FRA-53B (continued)													
X2	F									*	A317 SCREW, PAN HD: SAME AS A264	ea		6										
X2	F									*	A318 WASHER, SPLITLOCK: SAME AS A269	ea		10										
X2	F									*	A319 WASHER, SPLITLOCK: SAME AS A270	ea		2										
X2	F									*	A320 WASHER, SPLITLOCK: SAME AS A272	ea		6										
X2	F									D	A321 SPROCKET: 06032; 3970-0065	ea		1										
X2	F									D	A322 SPT, GEAR ASSY: 06032; 0001-4236-001	ea		1										
X2	F									D	A323 SPT ASSY, MAST: 06032; 0001-5325-001	ea		1										
X2	F		3110-144-8662							*	A324 BEARING, BALL: 52676; SKF6028	ea		1										
X2	F		3120-909-3891							*	A325 BEARING, BRONZE: 06032; 0001-4198-001	ea		1										
X2	F									*	A326 RING, RETAINING: 79136; 5100-525	ea		1										
X2	F		5330-766-0757							*	A327 SEAL, PLAIN: 73680; 53X3483	ea		1										
X2	F		5330-904-2725							*	A328 SEAL, PLAIN: 73680; 53X2993	ea		1										
X2	F									*	A329 SHAFT, INNER: 06032; 0001-5329-001	ea		1										

(1) SOURCE CD (A)	(1) MAINT. CD (B)	(1) REC. CODE (C)	REPAIR PARTS FOR DIRECT SUPPORT, GENERAL SUPPORT, AND DEPOT MAINTENANCE (2) FEDERAL STOCK NUMBER	MODEL 1	2	3	4	5	6	IND CD	(3) DESCRIPTION	(4) UNIT OF ISSUE	(5) QTY INC IN UN PK	(6) QTY INC IN UNIT	(7) 30 DAY MAINT. ALW. DS (A) 1–20	DS (B) 21–50	DS (C) 51–100	GS (A) 1–20	GS (B) 21–50	GS (C) 51–100	(8) 1 YR. ALW. PER 100 EQUIP. CNTGCY PL.	(9) DEPOT MAINT. ALW. PER 100 EQUIP.	(10) ILLUSTRATIONS (A) FIGURE NUMBER	(10) ILLUSTRATIONS (B) ITEM OR SYMBOL NUMBER
											AN/FRA-53B (continued)													
X2	F									*	A330 SHAFT, OUTER: 06032; 0001-5311-001	ea		1										
X2	F									*	A331 SPROCKET: 06032; 3970-0062	ea		1										
X2	F									*	A332 BOLT, HEX HD: 06032; 5/8-11 X 2 Galv	ea		8									2.2	
X2	F									*	A333 NUT, HEX FIN: 06032; 5/8-11 Galv	ea		8									2.2	
X2	F									*	A334 WASH, SPLITLOCK: 06032; 5/8 Galv	ea		8										
X2	F									D	A335 NUT, CONDUIT: 71785; 143	ea		2										
X2	F									D	A336 NUT, HEX FIN: 06032; 10-24 SST	ea		8										
X2	F									D	A337 NUT, HEX FIN: SAME AS A102	ea		4										
X2	F									D	A338 NUT, HEX JAM: 06032; 1/2-20 SST	ea		1										
X2	F									D	A339 BOLT, EYE SHLD: 71747; 5/8 X 1-3/4 Galv	ea		1										
X2	F									D	A340 BOLT, HEX HD: 06032; 1/2-20 X 1-3/4 SST	ea		1										
X2	F									D	A341 BOLT, HEX HD: 06032; 1/2-13 X 3/4 Galv	ea		8										
X2	F									D	A342 BOLT, HEX HD: 06032; 1/2-13 X 1 Glav	ea		4										

(1) SOURCE CD (A)	(1) MAINT. CD (B)	(1) REC. CODE (C)	REPAIR PARTS FOR DIRECT SUPPORT, GENERAL SUPPORT, AND DEPOT MAINTENANCE (2) FEDERAL STOCK NUMBER	MODEL 1	2	3	4	5	6	IND CD	(3) DESCRIPTION	(4) UNIT OF ISSUE	(5) QTY INC IN UN PK	(6) QTY INC IN UNIT	(7) 30 DAY MAINT. ALW. DS (A) 1–20	DS (B) 21–50	DS (C) 51–100	GS (A) 1–20	GS (B) 21–50	GS (C) 51–100	(8) 1 YR. ALW. PER 100 EQUIP. CNTGCY PL.	(9) DEPOT MAINT. ALW. PER 100 EQUIP.	(10) ILLUSTRATIONS (A) FIGURE NUMBER	(10) ILLUSTRATIONS (B) ITEM OR SYMBOL NUMBER
											AN/FRA-53B (continued)													
X2	F									D	A343 BOLT, HEX HD: 06032; 5/8-11 X 2-1/4 Galv	ea		4										
X2	F									D	A344 BOLT, HEX HD: 06032; 1-8 X 3 Galv	ea		1										
X2	F									D	A345 SCREW, HEX HD: SAME AS A129	ea		4										
X2	F									D	A346 SCREW, RH SLOT: 06032; 10-24 X 3/8 SST	ea		8										
X2	F									D	A347 SCREW, RH SLOT: 06032; 5-40 X 1/2 SST	ea		6										
X2	F									D	A348 SET SCREW, SOC HD: 06032; 10-32 X 5/16 SST	ea		3										
X2	F									D	A349 SCREW, TAP PAN HD: 06032; #10 X 3/8 SST	ea		5										
X2	F									D	A350 SCREW, TRUSS HD: 06032; 1/4-20 X 3/8 SST	ea		8										
X2	F									D	A351 WASHER, SPLITLOCK: SAME AS A272	ea		8										
X2	F									D	A352 WASH, FLAT: 06032; #10 SST	ea		5										
X2	F									D	A353 WASH, EXT STAR: 06032; 1/4 SST	ea		8										
X2	F									D	A354 WASHER, SPLITLOCK: SAME AS A111	ea		8										
X2	F									D	A355 WASH, SPLITLOCK: 06032; 1/2 Galv	ea		12										

(1) SOURCE CD (A)	(1) MAINT. CD (B)	(1) REC. CODE (C)	(2) FEDERAL STOCK NUMBER	(3) DESCRIPTION MODEL 1	2	3	4	5	6	CD IND		(4) UNIT OF ISSUE	(5) QTY INC IN UN PK	(6) QTY INC IN UNIT	(7) 30 DAY MAINT. ALW. DS (A) 1–20	DS (B) 21–50	DS (C) 51–100	GS (A) 1–20	GS (B) 21–50	GS (C) 51–100	(8) 1 YR. ALW. PER 100 EQUIP. CNTGCY	(9) DEPOT MAINT. ALW. PER 100 EQUIP.	(10) ILLUSTRATIONS (A) FIGURE NUMBER	(10) ILLUSTRATIONS (B) ITEM OR SYMBOL NUMBER
											AN/FRA-53B (continued)													
X2	F									D	A356 WASHER, SPLITLOCK: SAME AS A334	ea		5										
X2	F									C	A357 MOUNT ASSY: 06032; 0001-5373-001	ea		1										
X2	F									D	A358 MT, ROTARY JOINT: 06032; 0001-5308-001	ea		1									2.30	
A	F									D	A359 MT, ASSY, SYNCHRO: 06032; 0001-5327-001	ea		1										
X2	F									*	A360 MT, SYNCHRO: 06032; 0001-5306-001	ea		1									2.31	
X2	F									*	A361 ADAPTOR, SHAFT: 06032; 0001-5318-001	ea		1									2.31	
X2	F									*	A362 BEARING: 38443; R-6-ZZ	ea		2									2.31	
X2	F									*	A363 CLAMP, HOSE: 08484; QS100-M36S	ea		1										
X2	F									*	A364 COUPLING, SHAFT: 00141; T7-3	ea		1									2.31	
X2	F									*	A365 SEAT, BEARING: 06032; 0001-5307-001	ea		1									2.31	
X2	F									*	A366 SHAFT: 06032; 0001-5319-001	ea		1									2.31	
P	F		6625-713-2052							*	A367 SYNCHRO, XMTR: 23021; 1-HG	ea		1	*	*	2	*	*	2	8	3	2.31	
X2	F									*	A368 BOLT, HEX HD: SAME AS A174	ea		2										
X2	F									*	A369 WASH, SPLITLOCK: SAME AS A228	ea		2										

(1) SOURCE CD (A)	(1) MAINT. CD (B)	(1) REC. CODE (C)	REPAIR PARTS FOR DIRECT SUPPORT, GENERAL SUPPORT, AND DEPOT MAINTENANCE (2) FEDERAL STOCK NUMBER	MODEL 1	2	3	4	5	6	(3) DESCRIPTION IND CD		(4) UNIT OF ISSUE	(5) QTY INC IN UN PK	(6) QTY INC IN UNIT	(7) 30 DAY MAINT. ALW. DS (A) 1–20	DS (B) 21–50	DS (C) 51–100	GS (A) 1–20	GS (B) 21–50	GS (C) 51–100	(8) 1 YR. ALW. PER 100 EQUIP. CNTGCY PL.	(9) DEPOT MAINT. ALW. PER 100 EQUIP.	(10) ILLUSTRATIONS (A) FIGURE NUMBER	(10) ILLUSTRATIONS (B) ITEM OR SYMBOL NUMBER
											AN/FRA-53B (continued)													
X2	F									C	A370 SHIELD ASSY, RAIN: 06032; 0001-5365-001	ea		1									2.8	
P	F		5330-933-7974							*	A371 GASKET: 06032; 0001-5350-001	ea		1	*	*	2	*	*	2	8	3		
X2	F									*	A372 RAIN SHIELD: 06032; 0001-5344-001	ea		1										
X2	F									C	A373 BOLT, HEX HD: SAME AS A178	ea		4										
X2	F									C	A374 BOLT HEX HD: SAME AS A229	ea		4										
X2	F									C	A375 NUT, HEX FIN: SAME AS A230	ea		4										
X2	F									C	A376 WASHER, SPLITLOCK: SAME AS A011	ea		8										
X2	F									B	A377 ERECTION KIT: 06032; 1000-0179-001	ea		1										
X2	F									C	A378 LIFTING SLING: 06032; 0001-4241-001	ea		1									2.6	
X2	F									*	A379 SHACKLE, CHAIN: 71747; 1/2 Galv, Rnd Pin	ea		2										
X2	F									*	A380 SHACKLE, ANCHOR: 71747; 5/8 Galv, Rnd Pin	ea		1									2.4	
X2	F									C	A381 MOUNT, ERECTION: 06032; 0001-4168-001	ea		1										
X2	F									C	A382 STRAP, LIFTING: 06032; 0001-4240-001	ea		1									2.6	
X2	F									C	A383 U-BOLT W/NUTS: 71747; 025	ea		2										

(1) SOURCE CD (A)	(1) MAINT. CD (B)	(1) REC. CODE (C)	REPAIR PARTS FOR DIRECT SUPPORT, GENERAL SUPPORT, AND DEPOT MAINTENANCE (2) FEDERAL STOCK NUMBER	MODEL 1	2	3	4	5	6	IND CD	(3) DESCRIPTION	(4) UNIT OF ISSUE	(5) QTY INC IN UN PK	(6) QTY INC IN UNIT	(7) 30 DAY MAINT. ALW. DS (A) 1–20	DS (B) 21–50	DS (C) 51–100	GS (A) 1–20	GS (B) 21–50	GS (C) 51–100	(8) 1 YR. ALW. PER 100 EQUIP. CNTGCY PL.	(9) DEPOT MAINT. ALW. PER 100 EQUIP.	(10) ILLUSTRATIONS (A) FIGURE NUMBER	(10) ILLUSTRATIONS (B) ITEM OR SYMBOL NUMBER
											AN/FRA-53B (continued)													
X2	F									C	A384 ANCHOR, SCREW: 73569; 6346-1 Thimbleye	ea		1										
X.	F									B	A385 GND HDW KIT: 06032; 1000-0176-001	ea		1										
X2	F									C	A386 ANCHOR: 06032; 0001-4210-001	ea		4										
X2	F									C	A387 BOLT, HEX HD: 06032; 1/2-13 X 9 Galv	ea		4										
X2	F									C	A388 BOLT, HEX HD: 06032; 3/4-10 X 18 Galv	ea		6										
X2	F									C	A389 NUT, HEX FIN: 06032; 1/2-13 Galv	ea		4										
X2	F									C	A390 NUT, HEX FIN: 06032; 3/4-10 Galv	ea		6										
X2	F									B	A391 MAST KIT: 06032; 1000-0210-001	ea		1										
X2	F									C	A392 CONN, XMSN SECT: SAME AS A201	ea		4										
X2	F									C	A393 MAST, INTMED: 06032; 0001-3978-001	ea		3										
X2	F									C	A394 MAST, TOP: 06032; 0001-5133-001	ea		1									2.18	
X2	F									C	A395 PACKING PREFORM: SAME AS A214	ea		4										
X2	F									C	A396 SPRING, EXT SST: 70472; E1000-095-350	ea		16										

(1) SOURCE CD (A)	(1) MAINT. CD (B)	(1) REC. CODE (C)	REPAIR PARTS FOR DIRECT SUPPORT, GENERAL SUPPORT, AND DEPOT MAINTENANCE (2) FEDERAL STOCK NUMBER	MODEL 1	2	3	4	5	6	CD IND	(3) DESCRIPTION	(4) UNIT OF ISSUE	(5) QTY INC IN UN PK	(6) QTY INC IN UNIT	(7) 30 DAY MAINT. ALW. DS (A) 1–20	DS (B) 21–50	DS (C) 51–100	GS (A) 1–20	GS (B) 21–50	GS (C) 51–100	(8) 1 YR. ALW. PER 100 EQUIP. CNTGCY PL.	(9) DEPOT MAINT. ALW. PER 100 EQUIP.	(10) ILLUSTRATIONS (A) FIGURE NUMBER	(B) ITEM OR SYMBOL NUMBER
											AN/FRA-53B (continued)														
X2	F									C	A397 XMSN SECT, SPG: 06032; 0001-5134-001	ea		4									2.9	
P	F		5985-933-9338							B	A398 ROTARY JOINT: 06032; 0001-5299-001	ea		1	*	*	2	*	*	2	8	3		
X2	F									C	A399 XMSN SECT, 20: SAME AS A192	ea		1										
X2	F									C	A400 BOLT, HI STRENGTH: 06032; 5/8-11 X 2 Galv	ea		48									2.2	
X2	F									C	A401 BOLT, HEX HD: 06032; 5/8-11 X 22 Galv	ea		1									2.18	
X2	F									C	A402 BOLT, HEX HD: SAME AS A215	ea		24										
X2	F									C	A403 NUT, HEX FIN: SAME AS A103	ea		24										
X2	F									C	A404 NUT, HEX HEAVY: 06032; 5/8-11 Galv	ea		50									2.9	
X2	F									C	A405 WASH, SPLITLOCK: SAME AS A113	ea		24										
X2	F									C	A406 WASH, SPLITLOCK: SAME AS A334	ea		48										
X2	F									C	A407 WASH, FLAT: 06032; 5/8 Galv	ea		12										
X2	F									B	A408 TOWER KIT: 06032; 1000-0208-001	ea		1										
X2	F									C	A409 ANGLE, TIE DOWN: 06032; 0001-4189-001	ea		6									2.7	
X2	F									C	A410 BASE, TWR SPT: 06032; 0001-4174-001	ea		1									2.2	

(1) SOURCE CD (A)	(1) MAINT. CD (B)	(1) REC. CODE (C)	REPAIR PARTS FOR DIRECT SUPPORT, GENERAL SUPPORT, AND DEPOT MAINTENANCE (2) FEDERAL STOCK NUMBER	MODEL 1	2	3	4	5	6	CD IND	(3) DESCRIPTION	(4) UNIT OF ISSUE	(5) QTY INC IN UN PK	(6) QTY INC IN UNIT	(7) 30 DAY MAINT. ALW. DS (A) 1–20	DS (B) 21–50	DS (C) 51–100	GS (A) 1–20	GS (B) 21–50	GS (C) 51–100	(8) 1 YR. ALW. PER 100 EQUIP. CNTGCY	(9) DEPOT MAINT. ALW. PER 100 EQUIP.	(10) ILLUSTRATIONS (A) FIGURE NUMBER	(10) ILLUSTRATIONS (B) ITEM OR SYMBOL NUMBER
											AN/FRA-53B (continued)													
X2	F									C	A411 CLAMP, HINGE: 06032; 0001-4177-001	ea		2									2.2	
X2	F									C	A412 GUY KIT: 06032; 0001-4804-001	ea		1										
P	F		5970-615-9892							D	A413 INSULATOR: 79911; 31506	ea		36	2	4	8	3	2	2	89	70	2.4	
X2	F									D	A414 SHACKLE, CHAIN: 71747; 5/8 Galv Rnd Pin	ea		4										
X2	F									D	A415 TURNBUCKLE: 71747; 3/4 X 12 Jaw-Eye	ea		4									2.4	
X2	F									D	A416 THIMBLE, WR: 71747; 3/4 Galv	ea		8									2.4	
X2	F		5975-573-3510							D	A417 WIRE ROPE ASSY: 04025; 40GDE1/2	ea		80									2.4	
X2	F									D	A418 WIRE STRAND, STL: 06032; 0001-4803-001	ea		4									2.4	
X2	F									D	A419 WIRE STRAND, STL: 06032; 0001-4803-003	ea		32									2.4	
X2	F		4010-909-3875							D	A420 WIRE STRAND, STL: 06032; 0001-4803-005	ea		4									2.4	
X2	F									C	A421 TWR SECT BOTTOM: 06032; 0001-4970-001	ea		2										
X2	F									C	A422 TWR SECT INTMED: 06032; 0001-4972-001	ea		4										
X2	F									C	A423 TWR SECT TOP: 06032; 0001-4975-001	ea		1										

(1) SOURCE CD (A)	(1) MAINT. CD (B)	(1) REC. CODE (C)	REPAIR PARTS FOR DIRECT SUPPORT, GENERAL SUPPORT, AND DEPOT MAINTENANCE (2) FEDERAL STOCK NUMBER	MODEL 1	2	3	4	5	6	CD IND	(3) DESCRIPTION	(4) UNIT OF ISSUE	(5) QTY INC IN UN PK	(6) QTY INC IN UNIT	(7) 30 DAY MAINT. ALW. DS (A) 1–20	DS (B) 21–50	DS (C) 51–100	GS (A) 1–20	GS (B) 21–50	GS (C) 51–100	(8) 1 YR. ALW. PER 100 EQUIP. CNTGCY PL.	(9) DEPOT MAINT. ALW. PER 100 EQUIP.	(10) ILLUSTRATIONS (A) FIGURE NUMBER	(B) ITEM OR SYMBOL NUMBER
											AN/FRA-53B (continued)													
X2	F									C	A424 SPT, MAST BRG: 06032; 0001-4252-001	ea		1									2.3	
X2	F									*	A425 BUSH, SLV, HALF: 06032; 0001-4259-001	ea		2										
X2	F									*	A426 SPT, OUTLER: 06032; 0001-4250-001	ea		1										
X2	F									*	A427 SPT, WELDED: 06032; 0001-4243-001	ea		1										
X2	F									*	A428 BOLT, HEX HD: 06032; 5/8-11 X 1-3/4 Galv	ea		4										
X2	F									*	A429 NUT, HEX FIN: SAME AS A336	ea		12										
X2	F									*	A430 NUT, HEX FIN: SAME AS A333	ea		4										
X2	F									*	A431 WASH, SPLITLOCK: SAME AS A272	ea		12										
X2	F									*	A432 WASH, SPLITLOCK: SAME AS A356	ea		4										
X2	F									*	A433 SCREW, FH SLOT: 06032; 10-24 X 7/8 SST	ea		12										
X2	F									C	A434 BOLT, HI STRENGTH: 06032; 1/2-13 X 3-1/2 G Galv	ea		2										
X2	F									C	A435 BOLT, HI STRENGTH: 06032; 1/2-13 X 1-1/2 Galv	ea		72										
X2	F									C	A436 NUT, HEX HEAVY: 06032; 1/2-13 Galv	ea		74										
X2	F									C	A437 WASHER, SPLITLOCK: SAME AS A355	ea		74										

(1) SOURCE CD (A)	(1) MAINT. CD (B)	(1) REC. CODE (C)	REPAIR PARTS FOR DIRECT SUPPORT, GENERAL SUPPORT, AND DEPOT MAINTENANCE (2) FEDERAL STOCK NUMBER	MODEL 1	2	3	4	5	6	IND CD	(3) DESCRIPTION	(4) UNIT OF ISSUE	(5) QTY INC IN UN PK	(6) QTY INC IN UNIT	(7) 30 DAY MAINT. ALW. DS (A) 1-20	DS (B) 21-50	DS (C) 51-100	GS (A) 1-20	GS (B) 21-50	GS (C) 51-100	(8) 1 YR. ALW. PER 100 EQUIP. CNTGCY	(9) DEPOT MAINT. ALW. PER 100 EQUIP.	(10) ILLUSTRATIONS (A) FIGURE NUMBER	(10) ILLUSTRATIONS (B) ITEM OR SYMBOL NUMBER
											AN/FRA-53B (continued)													
X2	F									B	A438 SILICON GREASE: 06032; 0001-5568-001	ea		12										
X2	F									B	A439 NUT, HEX: SAME AS A226	ea		6										
X2	F									B	A440 BOLT, HEX HD: SAME AS A178	ea		12										
X2	F									B	A441 WASHER, SPLITLOCK: SAME AS A228	ea		6										
X2	F									B	A442 WASHER, SPLITLOCK: SAME AS A011	ea		12										
P	F		5315-829-0435							B	A443 KEY: 06032; 0001-4293-001	ea		1	*	*	2	*	*	2	8	3		
X2	F									B	A444 XMSN SECT, SHORT: 06032; 0001-5334-001	ea		1									2.9	

INDEX — FEDERAL STOCK NUMBER CROSS REFERENCE TO FIGURE AND ITEM NUMBER OR REFERENCE SYMBOL

STOCK NO.	FIGURE NO.	ITEM NO. REF. SYMBOL	STOCK NO.	FIGURE NO.	ITEM NO. REF. SYMBOL
5990-978-7456	2.29	1B1			